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TRANSPORT AND URBAN DEVELOPMENT ISSUES

BY

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TRANSPORT AND URBAN DEVELOPMENT ISSUES

1.0 INTRODUCTION

As the topic given is wide, this paper does not intend to cover all aspects of urban transport issues relating to the process of urban development. It will, therefore, only highlight the main problems and issues which need a special attention of those involved in planning and development of urban areas.

The interdependence of transportation and land use which shapes the urban environment has been the subject of many discussions. The complexities of the urban system itself make the understanding of these variables obscured. For these reasons, this paper begins with an overview of urbanisation and its implication on transportation

As a corollary to this process, a rapid rate of traffic growth in major cities is an inevitable phenomenon. This increase which is mainly caused by the high ownership of vehicles will be discussed in relative to private and public transport system.

Finally, the paper will examine the role of transportation in planning of urban areas and how an integrated approach of transportation planning

could be achieved, at the same time recognising the interrated problems of implementation of transport plans.

2.0 URBANISATION AND TRANSPORTATION

It has been recognised that major towns of this country have their beginnings at locations providing savings in transport costs: along major rivers, around seaports and along trading routes. The heritage of colonial past is also evident from the concentration of economic activities at these limited centres in the west coast of the peninsular Malaysia.

In the early period, the transport system was rather underdeveloped and movement of goods and services was restricted to few centres. The poor transport system actually helped these centres to increase their comparative advantage which explained their rapid growth at the expense of other alternative locations.

Since then there have been tremendous improvements in our transport system. This enhances the growth of smaller centres, thus reducing transport costs and creating larger market for the economic products. The expansion of economic activities in

the urban areas has not only attracted immigrant population but also generated an increase in travel demand.

Malaysia, like many other developing countries, is experiencing phenomenal growth in urban population mainly due to rural-urban and urban-urban migration. This has resulted a steady increase in urbanization of the country as a whole. In particular, the urbanisation rate in peninsular Malaysia has increased by four times since 1911 (See Table 1).

TABLE 1: PENINSULAR MALAYA: POPULATION & URBANISATION

YEAR	TOTAL POPULATION	URBAN POPULATION	
		TOTAL	%
1911	2,330,000	233,198	9.9
1921	2,907,000	406,980	14.0
1931	3,788,000	570,513	15.1
1947	4,908,000	929,928	18.9
1957	6,268,000	1,666,969	26.6
1970	9,147,000	2,638,000	28.8
1980	11,426,600	4,288,800	37.5
1985	12,873,700	5,340,600	41.5

SOURCE: VARIOUS CENSUS REPORTS
FMP, MID-TERM REVIEW

The present annual population growth rate of 2.5% does not pose much problem to a country having an annual growth of GNP of 7.9%. However, the present 4.5% annual growth rate of urban population puts a lot of pressure on the infrastructure and social services in the urban areas. It is anticipated by year 2000, half of the population will be living in the urban areas.

How does the infrastructural development cope with the increase in the population?

Relative to her neighbours, the progress of road building this country can be said to be satisfactory.

Federal Routes I, II and III were already completed by the time of independence in 1957. This formed the basis of highway system in Peninsular Malaysia (Malaysia, 1984 a). Since then the main focus was the maintenance and upgrading of the existing roads. It was not until 1967, when the General Transport Study was undertaken, the planning and development of new road network were made. Based on the recommendations of the study, improvements to and extension of the existing road network were emphasized in the Second Malaysian Plan. The project included the

expansion and improvement of major arterial roads linking the major agricultural and mineral production areas to markets and ports and providing access to new land settlement schemes. Only towards the later half of the plan period, emphasis is given to road improvement projects for the urban and inter-urban road network.

Despite the increase in the road network in the country by 28.3% in 1981-83 period (Malaysia, 1984 b) the travel demand created by high urbanisation rate still exceeds the supply of roads particularly in the urban areas.

3.0 VEHICLE OWNERSHIP PATTERN

The number of registered motor vehicles in Malaysia grew at an average rate of 11.2% from 2.6 million in 1980 to 3.6 million in 1983 (Malaysia, 1984 b). This resulted in an increase in the overall vehicle per population ratio of 189 vehicle per thousand in 1980 to 241 in 1983, representing one of the highest in the region.

Out of the total vehicles registered in 1983, 32% are private cars and motorcycles combined (See

Table 2). This clearly demonstrates the predominance of private vehicles on the Malaysian roads.

TABLE 2: MALAYSIA: REGISTRATION OF MOTOR VEHICLES, 1983

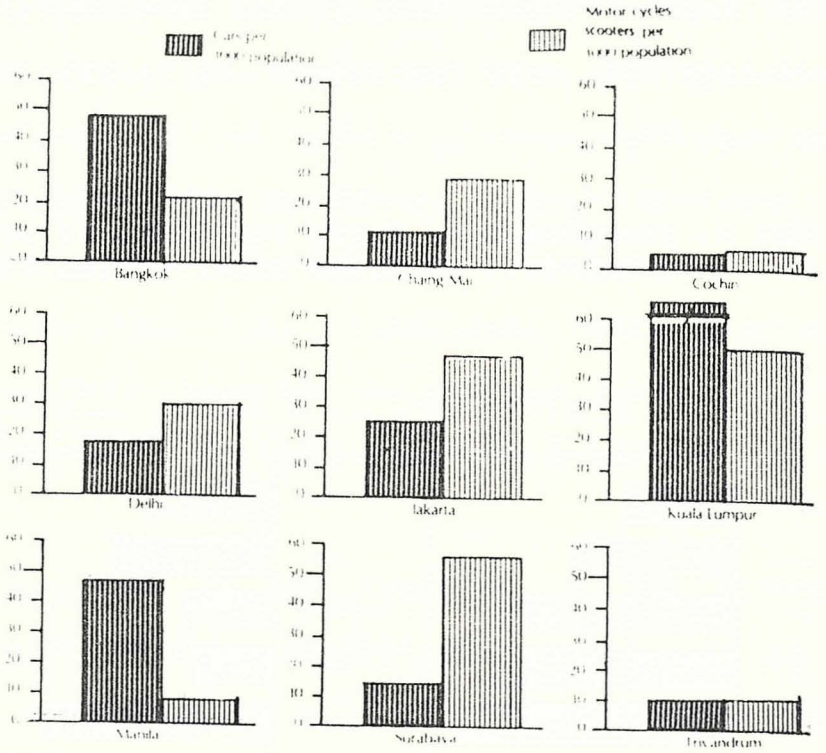
TYPES OF VEHICLES	1983	%
Bus	18,160	0.5
Taxi and hired car	26,270	0.7
Lorry and van	248,180	7.0
Private car	1,150,630	32.2
Motorcycle	2,029,100	56.8
Others	97,900	2.8
TOTAL	3,570,240	100.0

SOURCE: FMP, Mid Term Review

Since the use of public transport depends largely upon the extent to which the public does or does not switch its travelling habits to private cars, it is worth noting the level of car ownership particularly in the urban areas. In 1980, there were 16.3 persons per car in the country as a whole. The similar ratios for Kuala Lumpur and Ipoh were 11.7 and 9.0 respectively. Comparing these figures with developed countries, like Japan

with 4.9 and Sweden 2.9 for the same period, the car ownership in this country is relatively low. It must be borne in mind that our road capacity is much lower than that of these countries. Realistically, if a comparison is made to other selected cities in ESCAP Region, Kuala Lumpur is well at the top in terms of car and motorcycle/scooter ownership (See Fig. A).

FIGURE A: VEHICLE OWNERSHIP IN SELECTED CITIES

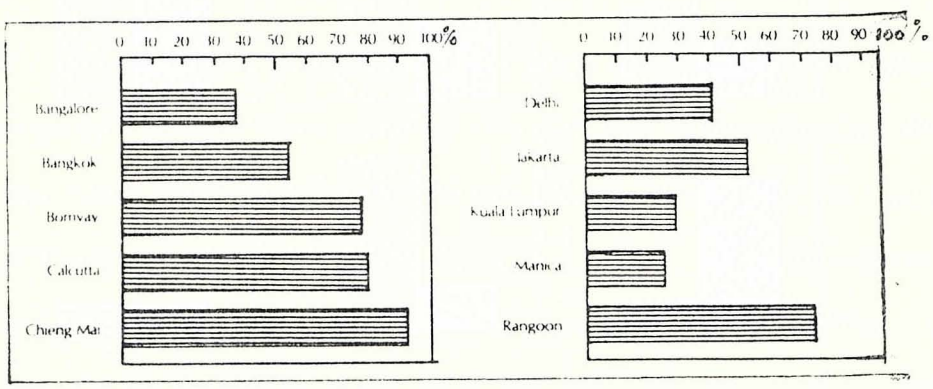


SOURCE: UN, ESCAP (1984)

Travel by private transport remains the most popular means of movement in urban areas of this country. In 1980, 70.8% of the total passengers in Kuala Lumpur travelled by private transport which formed 85.9% of the total vehicular movement. In contrast, public transport accounted for only 29.2% of the total passengers travelling by 2% of total vehicles (Wilbur Smith, 1980). Similar pattern of movement prevails in other major towns.

In comparison to other selected cities in ESCAP Region, Kuala Lumpur has one of the lowest percentage of trip performed by public transport (See Fig. B).

FIGURE B: PERCENTAGE OF TRIPS PERFORMED BY PUBLIC TRANSPORT: SELECTED ESCAP CITIES (1980)



SOURCE: UN, ESCAP (1984)

The growth of private cars depends primarily upon the growth of income and price of car. Besides that other factors are also significant. They include factors such as changes in shopping habit, amount of frustration due to congestion, the availability of alternative cheap and convenience form of transport.

It must be noted that extensive use of cars in rural areas provide good transportation without major traffic problem. However the situation in large cities is different and more complicated The increasing use of cars improves mobility of their users but also create serious problems in cities: deterioration of public transportation, pollution, congestion and accidents. Such problems tend to become issues of public concern because they involve externalities i.e., individual users generate costs which they themselve do not pay fully but the costs are borne by the government on behalf of the society.

What is our reaction to the present trend of high private vehicle ownership? It is natural the action would be to build new roads and widen the existing ones to adapt the increase in traffic. More and more parking facilities will be provided and traffic engineering control will be introduced.

In short, our towns and cities will be designed or redesigned to accommodate the increasing car ownership population. The problem does not just stop here.

4.0 TRANSPORTATION AND URBAN PLANNING

As indicated earlier, the rapid growth in urban population and traffic has resulted in growth sub-urban areas and the spread of housing estates and out-of-town shopping centres.

The rapid development of housing estates that is taking place all over the country has changed most of the agricultural areas into typical urban landscape with rows of houses and parallel roads. They are designed based on the assumptions of lesser use of public transport and predominant use of private cars. This can be observed from their physical lay-outs which emphasize the importance of car movement than pedestrian and public transport movement. Public transport routes and facilities are normally provided in these development. However, in most cases they are provided after a scheme or plan has been implemented. This gives rise to a number of difficulties to transport operators such as uneconomic bus operation due to the routes and other facilities not properly designed.

Generally the efficiency of a public transport system can be achieved if balance densities of development along its routes are provided. For example, location and density of residential development should be planned in relation to possible public transport routes. Larger developments would normally justify level of public transport service where the density of development is greater. There are various alternatif patterns of development which integrates transportation and urban development concept (See Ghani, (1984) for brief discussion).

Time has come for the government and local authorities to realise the importance of preparing Comprehensive Transport Plan as an integral part of the planning process. The transport problems should be dealt within the context of land use planning with maximum accessibility to all groups of the population. This calls for more discussions and consultations between those concerned with urban development and those responsible with the provision of public transport.

5.0 THE OTHER RELATED PROBLEMS

Basically, the essential feature of transport problem is the problem of supply and demand of transport

service and worst still the decisions that affect the two factors are generally independent of each other. The demand for travel is a function of time and other factors which have been discussed earlier. It fluctuates according to the purpose of the trip and the time of the day. However, the supply of transport facilities is rather inelastic. It takes time to construct new roads or improve the existing one due to the financial and land problems. Delays usually occur in acquiring land for the purpose of road construction.

Another problem which creates unsatisfactory situation in transportation in this country is the problem of 'multiplicity' either multiplicity of ministries or the multiplicity of departments (Mohd. Hassan, 1984).

This can been seen as follows:-

(i) The State roads are under the responsibility of the State authorities.

(ii) The Federal roads are under the responsibility of the Ministry of Works and Utilities and looked after by Public Works Department and Malaysia Highway Authority.

(iii) Licensing of vehicles is under the Ministry of Public Enterprise.

(iv) Planning and determination of bus routes in a city is the responsibility of the local authority.

(v) Issuing the driving licences and collection of road tax is carried out by the Road Transport Department under the Ministry of Transport. Railways and civil aviation are also under this Ministry.

Each ministry and department works toward its own objectives which may or may not coordinated with the efforts of the others. The problems of competition and priorities could be avoided if there is an integrated policy on transportation both at local and national scale.

Not only transportation problem is increasingly difficult to deal but also the technology to cope with the problem is rapidly changing. For this reason training and research is necessary in transportation planning, traffic engineering and traffic management. There are may be enough personnels to deal with the

problem. However, most of them who are involved in the transportation may not have the required training. They may have done a good job through trial and error, but this period of trial and error should be shortened with proper training, particularly in service training. To cater for this special need a research and training centre for transport planning and management should be set up. This centre be fully utilised by the agencies and departments for training of their personnels and research of specific transport problem.

6.0 CONCLUSION

The present traffic problem due to increasing car ownership calls for careful analysis of the relationship between public and private mode and this could be coordinated.

The problem is like a vicious circle: increasing an ownership leads to deterioration of public transport due to decrease in revennue from fare and reduce speed and reliability of services because of congestion. This makes public transport unpopular.

The relationship between the two modes can be stabilised by parallel improvements of both and

by making public transportation independent of congestion. Thus we need to develop comprehensive transportation policy which consider not only the above mode but treating all modes as components of one system.

Part of the problems that we face today is a result of the failure to recognise the importance of comprehensive and integrated approach in transport planning and management. Therefore, it would not be too demanding if it is suggested here that it mandatory for local authorities to prepare comprehensive transport plan as part of their overall landuse planning process. What is crucial here is not only timing if its preparation but also the scope of the plan. It will certainly involve comprehensive study of landuse, present transport system, road capacity and network system, policies regarding the role of private and public transport, traffic management, resources for implementation, etc.

Rapid changes in transport technology require those involved in the industry to be trained and research to be continuously carried out and updated. To cater for this need, a research and training centre should be set up as suggested earlier.

The centre will not only carry out research and training functions but will also serve as centre for the integration of previous studies and as a forum where the experience of various agencies could be pooled.

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URBAN CONSERVATION: SOME RANDOM THOUGHTS

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Urban conservation is a neglected area of interest in Malaysia today. While many government agencies give lip service to its importance, very little action is seen on the ground and in practice. More pathetic is the limited interest and awareness from individuals and private organisations. This paper attempts to highlight some urban conservation issues in the hope that it would stimulate more awareness and interest in this area of concern.

URBAN SETTING AND DILEMMA

Urban conservation is a critical public action, but it must be directed away from the preservation of special isolated places towards the discovery and conservation of sensory quality and local history throughout the living environment. Every place that people inhabit has valuable and memorable elements. Diversity and rich identity is built out of these existing values.

Traffic is esssential for the general vitality of the town since human settlements function as meetings places and places for the exchange of goods and ideas. Traffic is a derived function from urban activities thus urban transport and urban physical form are closely related. Physical urban patterns greatly influence the relative merits of different transport systems, urban transport facilities greatly influence the development of physical urban patterns. That the building is an integral and subordinate part of the town and landscape.

The purpose of a town is to enhance the well-being of its citizens, and a good environment is one in which people can sense well, act completely, and feel at ease. People must be able to identify the place they live in, and to connect it with other places in their region. Places should reinforce the image of time, as well: make the present vivid, and connect it to past and future.

The twentieth century is characterised by the growth of societies whose economies are based upon industrialization and, as a result the development of great urban centres. This phenomenon has had two aspects: the progressive diminution of the rural population - at time accompanied by the abandonment of or lessening of importance of small urban centres - and the growth of large urban units at the expense of the countryside and neighbouring population centres.

The enormous and concentrated volume of built-up areas within urban centres and their peripheral growth of suburbia that has taken place during this centruy has confronted us with the most extensive urban disintegration ever known in history.

The reasons for this disintegration are well known. There is the general conflict between "unlimited economic growth" and the "environment". To begin with there is the immediate conflict between the "environment" and "technological industrialization" (mass production) on the one hand, and between "environment" and "mobility" (communication and inter-communication) on the other hand. Secondly, there is a particular conflict between the "urban environment" and the "growth of urban ativities and the scale of the town". This growth is often dictated by economic principles and decisions (frequently in relation to false needs), rather than by the town's physical capacity for change.

The participants in the urban drama are basically four at the present time: the land owner, the city, the state, and the federal government. They are exposed with contrdictory impulses and approach urban issues from completely different perspectives and often conflicts are never resolved. For example, on one side the landlord and his advisers (usually a surveyor) look at the notional value of the building and what might be put on the site despite their destructive impact on community values. They find it hard to think in terms of the property having a negative value and of making the most of what is currently on the site. On the other the authorities, genuinely committed to the goals of safeguarding the nation's historical and architectural heritage, and typically concerned with long-term land use plans and so are often reluctant to allow the changes needed to bring buildings back into use, as they do not typically think in terms of short-term and incremental use.

The basic issue in the urban environments dilemma is the clash between the common rights of ownership and the needs of the community. Neither is perception of this conflict in the "urban jungle" limited to adherents of particular political groups. And as long as the conflict remains submerged and its tensions unresolved, the bull-dozer will be king and it will continue to exact its grim toll.

URBAN CONSERVATION PHILOSOPHY

Urban conservation is generally recognised as the process of preserving buildings and urban areas so as to retain its aesthetic, historical, social and cultural values for past, present and future generation. The reasons for a conservation policy include:-

Aesthetic - to maintain the image of its unique character of the urban area

Psychological - to serve as visual and emotional balance. That the retention of a country's architectural heritage is a cultural and spiritual necessity.

Historical - to preserve for its present and future generations, the history through its architectural styles and townscapes associated with important historical events. The architectural heritage is an expression of social history, helps us to understand the relevance of the past contemporary life, and are records of artistic and social achievements.

Socio-economic - to preserve buildings still capable of useful economic life, to encourage new user for old buildings, and the control of new development, thus revitalizing old areas without having to destroy its former established fabric.

Environmental - to improve the urban environment through the acknowledgement of the inter-relation of transport facilities, road space and parking spaces, traffic and land use, particularly commercial pressure within the area.

All the reasons have values which are difficult to quantify and yardsticks used are relative in nature. It often depends on the reference point one takes in the criteria and judgement used.

For many years, only major monuments were protected and restored and then without reference to their surrounding. Recognition of the need for conservation today has widened ----- from a concern for individual buildings, to groups of buildings, to whole areas - in particular the centre of old towns. More recently it has been realised that if the surroudings are impaired even major monuments can lose much of their character.

At the same time, it is increasingly accepted that conservation must entail, not cocooning but sensitive treatment with a process of organic change. That conserving the integrity of a site does not necessary mean preserving all the individual monuments of which it may be composed. Something may well have to be sacrificed, since even when the protection of each of the architectural units located within the perimeter may seem to be vital the maintenance and protection of the landscape should be the major goal. The demolition of minor buildings might, in some cases, appear to be justified with the object of enhancing the significance of a major monument.

It is also recognised that entire groups of buildings, even if they do not include any single example of outstanding merit, may have an atmosphere that gives them the quality of works of art, welding different periods and styles into a harmonious whole.

Whatever the reason for its conservation, it will not be possible to consider the problems of the conservation area in isolation from the rest of the town, provision should be made for the preservation not only of the individual elements but of the original characteristics of the area as a whole. This is a fundamental.

Conservation work normally observes criteria that are common to all regions of the world, but tropical conditions naturally present their own problems of preservation. Issues involved include:-

a) laws necessary to serve an effective conservation policy;

b) the cost incurred in undertaking this type of work;

c) the end product resulting from implementing a conservation policy, that is simply what sort of buildings; and

d) What sort of buildings we want and where we want them.

LEGISLATION AND STATUTORY MEASURES

The law, decree or administrative act providing for the conservation of an old town, a village, or a district, is always more complex than the legal provision necessary for the protection of a single isolated building, mainly because of the problems of multiple ownership and human occupation.

If an urban site is to enjoy a regime of permanent and efficient conservation, the public authorities must have legal means of enforcing measures designed to maintain the integrity both of the landscape and the architectural heritage within the site so that any threat to the value of the site or its monuments can be controlled by the national legislation - by decree or by formal administrative decisions.

In Malaysia, the Antiquities Act, 1976 (Act 168) provides for the control and preservation of, and research into ancient and historical monuments, archaelogical sites and remains, antiquities and historical objects and to regulate dealings in and export of antiquities and historical objects and for matters connected therewith.

The Town and Country Planning Act, 1976 (Act 172) provides for the proper control and regulation to town and country planning in local authority areas. Within this Act powers are provided for the planning and control of the use of land and building. The Local Government Act, 1976 (Act 171) provides Local Authorities powers to make by-laws in respect of all such matters as are necessary or desirable for the maintenance of the health, safety and well-being of the inhabitants or for the good order and government of the local authority area.

Statutory measures for urban conservation may be classified by distinguishing between those that seek to create new features for the improvement of the area or to take positive action against nuisances, which might be termed active, and those that are designed to regulate changes in order that they should conform to a certain standard of urban environmental quality - these might be termed passive. However, such a division would not reflect all of their most interesting characteristics: such as their generality or specificity, and the mechanisms by which their purposes are put into effect.

A fivefold classification, grouped according to their principal function, does provide a more satisfactory overall view. It elaborates the distinction between "active" (abatement improvement) and "passive" (control) measures.

a) General Policy - A general means of concentrating a variety of statutory (and probably non-statutory) action in a given area, normally involving some form of statutory designation. For example -

   1. General Improvement Areas
   2. Conservation Areas
   3. Development Plans

b) Specific Policy - A means of pursuing a specific objective in a given area through procedures normally contained within a single statute, usually involving statutory designation. For example:

   1. Advertisement control (areas of special control)

c) Control - A means of directing environment changes. For example:

   1. Developmental Control
   2. Tree Preservation

d) Abatement - A means of taking positive action some offensive phenomenon. For example:

1. Discontinuance Orders
2. Statutory nuissances and noise abatement
3. Control of Waste Land

e) Improvement - A means of carrying out a specific improvement normally involving particular types of development. For example:

1. Conversion of a highway to a footpath.

Conservation legislation awareness may be identified from three approaches - a reformist view, a functional view and a social preference view. It poses questions about their effectiveness within their respective standards, and the extent to which a given measure has improved environmental quality, achieved other related purposes, or satisfied the requirements of popular preference.

The main objective will be to create favourable circumstances for private initiation in conservation. Protection of the area under appropriate statutes is aimed to give private interest the confidence necessary for efforts to recondition old buildings and to adopt them for modern use.

THE ECONOMICS OF CONSERVATION

The Penang State Museum has made several proposals for the preservation of buildings of historical and architectural note in Penang, but to date only Fort Cornwallis, St. George's Church, City Hall and Town Hall have been gazetted under the Antiquities Act, 1976, and only close to half a million ringgit have been allocated by the National Museum since 1980, towards the restoration and maintenance of Fort Conwallis. Without doubt the special grants facilities that is available is grossly inadequate.

In the case of buildings and monuments under private ownership, unfortunately because of the high capital costs in restoring and maintaining many of these structures, it is unlikely that the private owners will do much work beyond the minimum amount of repair and maintenance which often prove in sufficient to prevent a further deterioration of these historical properties.

The economic pressures which militate against urban conservation are now more powerful than at any time: freaks of the Stock Market apart, land and property represent the soundest and most lucrative of investments, particularly in the hands of the developer. It is to the developer, therefore, whether in the public or private sector, that the conservationists should pitch their arguments: not simply by being critical or abusely, but by showing that intelligent cooperation can yield high dividends, financially and aesthetically.

Aware that the profit motive is frequently at loggerheads with sound urban design, and as the predicament of historical preservation itself attests, the most lucrative private development decision is not necessarily one that enriches the urban environment, private owners must be provided with incentives so as to be shielded from often severe economic burdens that they may suffer under the conventional conservation order.

Incentive zoning programmes which seeks to modify the economics of development have taken two principal form in the United State of America: zoning bonus and development rights transfers. Both proceed from the premise that in return for the right to build larger and hence more profitable structures, developers will agree to provide or finance urban amenities. (See Costonis 1972).

Zoning Bonuses are simply additional increments of density granted as a quid pro quo for the inclusion in the developers' project of one or more specified amenities, such as plazas, arcades, subway or even theatres. In theory, the amount of the bonus should equal or slightly exceed in value the cost that the developer will incur in providing the amenity.

Development Rights Transfers purpose is to relieve the market pressures that threaten low-density uses, such as landmarks, with replacement by high-density substitutes that promise a greater economic return. Under the development rights transfer technique advocated in the Chicago Plan the owner would be permitted to transfer his unused development potential (development rights), to other sites. Owners of these sites will presumely be prepared to pay the cash value of the development rights because the latter enable them to build proportionately larger and hence more profitable strucures or their site.

Transfer programmes do not create new space; they merely redistribute space that has already been authorised. Unlike bonus programmes which inject new increments of density into the community.

The development rights transfer component of the Chicago Plan breaks the linkage between the ownership of a particular site and the latter's development rights. These rights can be concentrated or dispersed as community goals and urban planning criteria dictate and are therefore freed from the straitjacket clamped upon them by the accident of ownership. Cities can convert the landmarks' unused development rights into hard cash by authorising their sale for use on non-landmark sites. And they can compensate owners with the income derived from development rights sales. Not only are landmarks preserved through the transfer programme but the city avoids either dipping into scarce general revenue or

making unrealistic requests upon hgher levels of government in the process.

The Chicago Plan compensates the landmark owner for actual losses that he suffers upon designation. Prior to proposing designation of his property the city will obtain an appraisal and on the basis of the appraisal, the city will then devise a package to compensate the owner that will include both an appropriate real estate tax reduction and an authorization to transfer the landmark's unused development rights. An additional subsidy, funded by the city development rights fund, may be included to cover for losses not met by the package and to deal with any special difficulties affecting the building.

From the urban design aspect, if development rights were haphazardly redistributed within a transfer district, at least two kinds of urban design abuse might result:

> First, severe overloads might be experienced by the district's physical and service infrastructure, including its pedestrian and vehicular transport systems, its utilities its network of public services and facilities, and its environment and amenities.
>
> Second, the district's visual and diversional character might be impaired by the introduction of structures wholly out of scale with their neighbours.

The principal object of the Plan's urban design controls, of course, is to minimise its potential for description under either headings.

These controls have a positive function as well. Through them the city can coordinate development rights transfers with the accomplishment of other urban design goals that depend in part or whole upon the pattern of density concentration within the district.

The transfer mechanism provides a tool that the city can use to channel density selectively to predetermined locations in furtherance of these goals; which is addressed through a two-stage system of controls. The first stage occurs when the development rights transfers district is formally established; the second, at the time the transfer actually take place. The second-stage controls, which are intended to insure the rational distribution of space within the district, are four in numbers.

The first is the city's threshold determination of how many buildings it actually chooses to designate. Since the quantity of transferable development rights is strictly linked to the number of landmarks, the city can limit that quantity by restricting the number of designations that it makes.

Second, as an instance of density zoning, the Plan does not increase the total authorised within the transfer district by existing zoning. It merely shifts density from under-utilized landmark lots to appropriate transferee sites. As a result, heightened demands as the district's physical infra-structure will be experienced only at the individual transferee sites rather than throughout the entire district, as would occur if all lots there were upzoned to the densities permitted on these sites.

Third, the impact of density increases on specific transferee sites will be regulated by height and bulk ceilings that the city fixes for these sites. The city can authorise two types of increases, "major" and "minor" which are differentiated by the amount of additional bulk or height permitted on the individual transferee site. Minor increases are those which have a marginal impact on the existing physical infrastructure and visual and dimensional character of the site's environs. Major increases, on the other hand, threaten to impair these elements unless subjected to rigorous site planning and design review. Their impact on the environs of

the transferee site should be carefully evaluated beforehand, and additional requirements, including the provision of on-site link-ups with the public transit system or the widening of the roads or pavements and other pedestrian space, should be imposed where appropriate.

Fourth, the Plan's potential for urban design disruptions can be further minimised by identifying "sensitive" areas within the transfer district where density increases would be prohibited altogether.

ADMINISTRATION, SUPERVISION AND VIGILANCE

Conservation is impossible unless a thorough and permanent routine of inspection and observation is carried-out, applying to the whole site as well as to the property within it. In addition to natural factors of deterioration such as weather, insects and vegetation; there are also human factors responsible for deterioration.

Structures that have been allowed to deteriorate for a long period of time or have abandoned obviously require major repairs. Causes of damages are found in sites that have been reinhabited or are to be "modernised". For example, the city may plan to widen the roads or develop public sites for building purposes.Urban traffic has become an actual agent of destruction and the incessant movement of heavy vehicles in the narrow streets of certain areas has a cumulatively harmful effect on both foundations and structures.

It will be the duty of the administrative services charged with implementing conservation legislation to ensure that the provisions of the law have been fully satisfied. One of the commonest administrative problems, however, often very difficult to solve, is the conflict of jurisdiction between the public authorities responsible for the conservation services and other

public authorities having different terms of reference.

Where sites are inhabited special conservation departments have to be set-up to inspect and take care of the urban site as a whole, including sections for the repair and maintainance of the sites. The inhabitants of the site must be made aware that their property is worth preserving and that they be encouraged to recognise that the official agents working for the administrative body in charge of conservation are performing a public duty. Public involvement and participation are essential ingredients for the successful implementation and maintenance of the projects in such particular cases.

PLANNING

Urban conservation, particularly when dealing with busy urban sites with active population must take into account a great number of factors, both material, economic and social. The planning should not be restricted to measures aimed exclusively at the protection and conservation of cultural property. It must also take account of the needs, convenience and natural aspirations of the people actually living on the stie, particularly as regards comfort and opportunities for progress, for it would be quite unfair to impose upon them unnecessarily rigid styles and conditions of life of some past age.

Every old building presents peculiar problems and demands individual treatment. No building lacking aesthetic merit, not evoking a genuine pietas, and playing no part in the landscape should be allowed its occupy a site needed for something else solely on the grounds that it is unique. In planningthe conservation of the historic quarter itself, the aim should be to protect not only the distinctive features and the general configuration, but also what might be called

the geographical accidents, that is, any distinctive evidence of features of interest which have fallen into ruin or have been mutilated. Conservation of use may be permitted if it does not mean physical annihilation as well. So long as the merits of their exteriors and their value in the landscape are preserved, do what you will with the interior.

Heavy road traffic, the parking of vehicles of all kinds and the loading and unloading of mechandise from lorrys are inevitable features of life in modern towns. The influx of visitors and tourist visiting the conservation areas are both useful and necessary, not least for the expansion of trade that inevitably results. Adequate parking facilities should therefore be provided, conveniently located in relation to the monument and sites but without creating a nuisance.

There must also be some policy concerning the construction of architectural replicas, though these are seldom acceptable because it devalue the original.

The policy concerning the architectural conception of new buildings is fundamental because the architecture of today is as much a part of the urban scenery as the historic. We have to be capable of intelligently integrating an architecture, that is the expression of the times in which we live, into the structure of one towns.

COMMITMENT AND STRATEGY

Urban conservation is fundamentally a question of adapting the town to the real social and human needs of the man today. The use of buildings is, therefore, an essential aspect, for the function and aesthetic character of buildings always go together. Their relationship is essential in the creation of satisfactory environments where the twofold aspect of function and aesthetisme is concerned.

It calls for a strategy that must be established which operates at various levels in order that the urban restructuring of the outstanding conservation areas may be soundly based. This calls for firstly, giving every encouragement to renew and regenerate where necessary the existing property and maintain the quality and character of the place inherent in its form and content. Secondly, by urban management to remove and eliminate any factors which contribute to the degenaration or deterioration of the physical environment. Thirdly, to restore property in government ownership as quickly as possible and where sites are available to redevelop as appropriateon that land. Finally, to help private owners to restore property and encouragement them to reinvest in the area.

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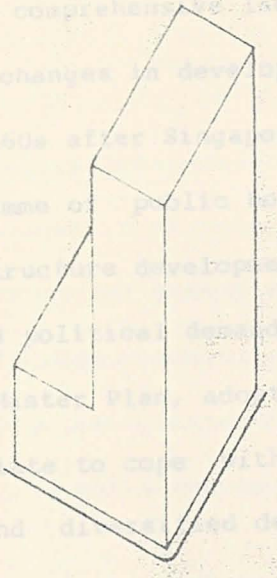

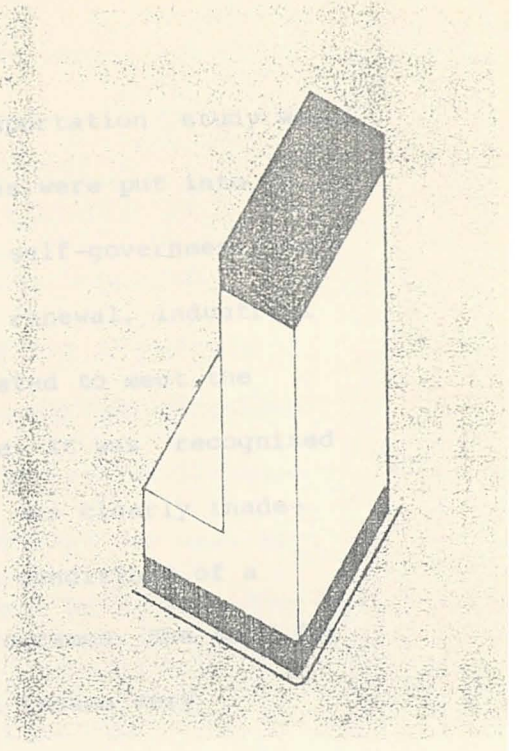

FIGURE 1. A Typical Zoning Bonus*

A. Office building utilizing maximum FAR with no bonus space.

B. Office building with an amenity (arcade) for which a zoning bonus of additional floor area is awarded.

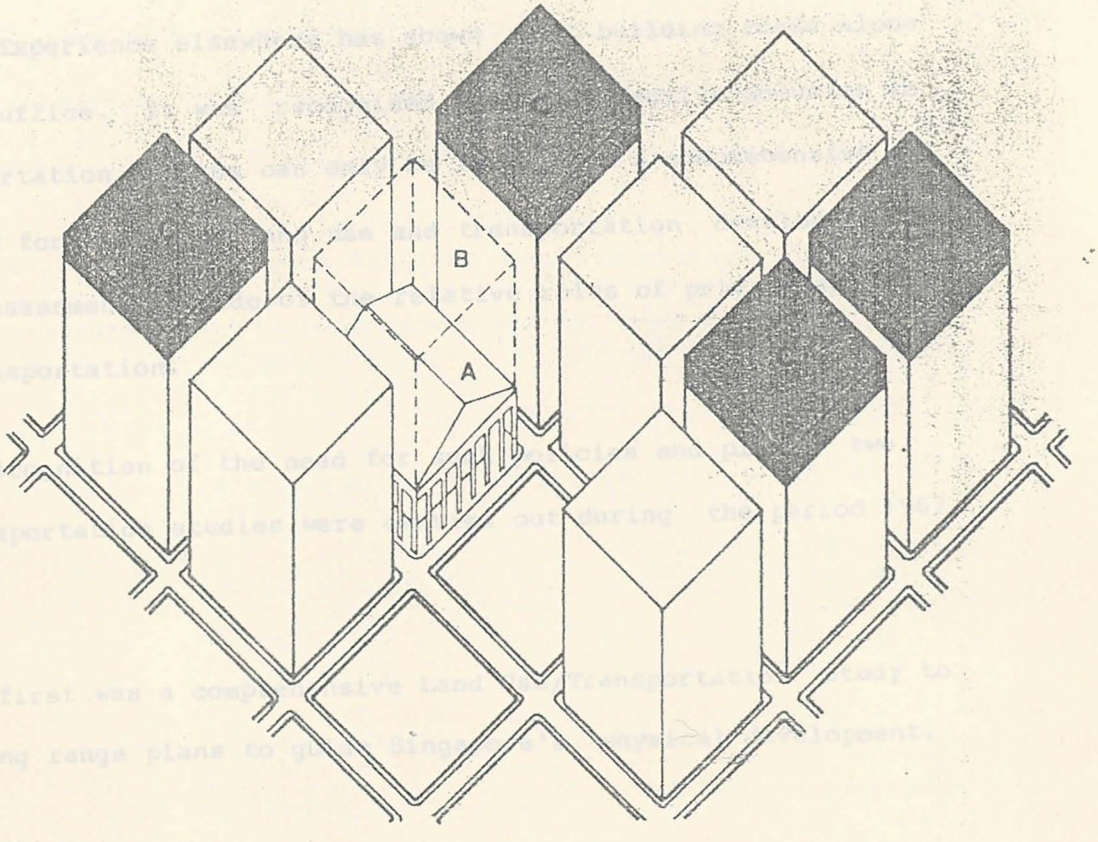

FIGURE 2. Development Rights Transfer

The landmark building (A) utilizes only a fraction of the development rights of the site, the remainder of which (B) are transferred to various other sites within a transfer district and appear as additional bulk (C) on neighboring buildings.

Urban Transport in Singapore : Lessons From Experience

The Early Planning Studies

The need for a comprehensive landuse & transportation study was recognised as major changes in development policies were put into effect in the early 60s after Singapore attained self-government. An unprecedented programme of public housing, urban renewal, industrial and related infrastructure development was initiated to meet the social, economic and political demands of the time. It was recognised that the Statutory Master Plan, adopted in 1958, was clearly inadequate and inappropriate to cope with the changed conditions of a rapidly expanding and diversified development programme. The need for a new "Plan" to co-ordinate physical development became very apparent.

Singapore had also recognised at a very early state that like all growing cities, it would have to grapple with its growing traffic problems. Experience elsewhere has shown that building roads alone would not suffice. It was recognised that an effective solution to the transportation problem can only be found with a comprehensive set of policies formulated on land use and transportation development and a proper assessment is made of the relative roles of private and public transportation.

In recognition of the need for such policies and plans, two major transportation studies were carried out during the period 1967 to 1972.

The first was a comprehensive Land Use/Transportation Study to prepare long range plans to guide Singapore's physical development.

The second was a more detailed study of Singapore's public transport requirements in order to select a mass transit system from several alternatives that were examined.

Both studies, separately carried out by different consultants, independently reached the conclusion that restraints on both car ownership and usage would be necessary before the 1990s. These conclusions implied that radical changes would have to be made on policies and attitudes to car ownership and usage and a shift towards more widespread use of public transportation.

The overall strategy require the imposition of increasing restraints on private car ownership and usage accompanied by improvements to public transport.

Obviously, such changes cannot be brought about overnight. The imposition and the severity of various restraint measures would need to be staged. Time would also be required to improve existing bus services and the building of a mass rapid transit system.

The various measures that had been implemented since the early 70s are the outcome of the conclusions of these studies.

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Vehicle Population - Growth & Control

The very stiff fiscal measures that have been in force over the last 10 years or so to curb the growth of car ownership are a direct result of our early transportation studies.

These studies had estimated that the car population will grow from 136,000 in 1973 to about 400,000 by the early 90s, ie a three-fold increase, if there are no restraints on car ownership. Corresponding to this level of motorisation, travel projections for the early 90s have indicated that the scale of the road network required would be of such a magnitude that it would be completely incompatible with the urban environment. For instance, it was estimated that a few roads in the Central Area will have to provide for 9 to 16 lanes of traffic for each direction of traffic flow. Clearly, such a scale of roads would not only destroy the city but traffic operations over so many lanes would be impractical and hazardous. It was therefore obvious that the forecasted private car travel demands would have to be scaled down considerably in order that a more practical scale of roads can be planned. Our studies also indicated that the road network can be expanded to cope with the travel demands corresponding to a car population of about 260,000 or less by the early 1990s provided that some restraints were also imposed in car access in the city area.

Shortly after these studies, various alternative measures of car ownership restraints were examined. Of these, fiscal measures in the form of increased import duties, registration fees and annual road taxes, were considered the most appropriate and effective.

As a result, import duties on cars, their registration fees & road taxes had been progressively increased over the last decade or so to check their growth. Details are shown on the following tables:

Table I - Import Duties on Motor Cars

Period	Import Duties
1. Before June 68	10% of Open Market Value
2. June 68 to October 72	30% of Open Market Value
3. October 72 onwards	45% of Open Market Value

Table II - Registration Fees on Motor Cars

Period	Registration Fees
i) Up to Jan 80	$15 for all motor cars
ii) From Feb 80	$1,000 for private cars $5,000 for company cars

Table III - Additional Registration Fees (ARF) On Motor Cars

Period	ARF
i) Before Oct 72	10% - 25% ad valorem
ii) Oct 72 to Dec 73	25% ad valorem
iii) Jan 74 to Dec 75	66% ad valorem
iv) Jan 76 to Feb 78	100% ad valorem
v) Mar 78 to Feb 80	125% ad valorem
vi) Mar 80 to Sep 83	150% ad valorem
vii) From Oct 83	175% ad valorem

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To encourage the replacement of old cars, a system of Preferential Additional Registration Fees (or PARF) was introduced in December 1975.

Table IV - Road Tax on Motor Cars

(Rate per c.c. of engine for 1 year)

Cubic Capacity of engine	Before Oct 72	Oct 72 to Dec 73	Jan 74 to Mar 75	Mar 75 to Dec 75	Jan 76 to Feb 80	Mar 80 to Oct 83	Oct 83 to Mar 85	From Mar 85
Up to 1,000 cc	10¢	10¢	14¢	20¢	33¢	40¢	52¢	60¢
1,001 to 1,600 cc	10¢	12¢	15¢	25¢	40¢	50¢	65¢	75¢
1,601 to 2,000 cc	10¢	15¢	22¢	30¢	45¢	60¢	78¢	90¢
2,001 to 3,000 cc	10¢	20¢	35¢	40¢	50¢	70¢	91¢	105¢
Above 3,000 cc	10¢	30¢	60¢	65¢	80¢	100¢	130¢	150¢

From March 1975, the road tax on a business-owned motor car (business service passenger vehicle) was raised to double that of an individual owned vehicle.

These fiscal measures, though unpopular, have succeeded in curbing the growth of Singapore's car population. The table below amply demonstrates this. While goods vehicle population had grown from 36,460 to 107,340 (or 194%) from 1974 to 1984, over the same period, the car population had merely increased by 77,500 (or 54%).

With increasing affluence, further increases in car taxes can be expected to keep the car population in check.

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The Area Licensing Scheme (ALS) - A novel traffic management tool

1. The Area Licensing Scheme

Following the findings of the earlier transportation studies on the need to restrain private car access into the city area, a small working group of traffic engineers from the Public Works Department of Singapore was formed in late 1973 to study & introduce measures to curb peak hour traffic congestion in the city.

Of the various possible measures that were examined to restrain private car travel, two measures were considered most appropriate for Singapore viz an increase in car parking fees coupled with a form of supplementary road pricing eg an Area Licensing Scheme (ALS).

Because of the difficulty of controlling through traffic and the use of chauffeur-driven cars, it was felt that parking fees alone as a measure of restraint would not be entirely satisfactory. It was decided, therefore, that an Area Licence Scheme coupled with increased parking charges within a defined Restricted Zone (RZ) be adopted.

The Area Licence Scheme (ALS) requires that specific categories of vehicles possess & display a supplementary licence to gain access into a defined Restricted Zone (RZ) which covers 620 hectares of the most built-up parts of the city. To simplify policing of the scheme, control is only at the entries to the RZ which are identified by large overhead gantries.

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Seeing that workers commuting by cars are the main targets of the scheme, it was decided that restrictions on private cars over a short period in the morning alone would suffice. It was felt that evening peak hour restrictions would not be necessary if motorists can be induced not to drive into the zone in the morning. The hours of restrictions were initially set at 7.30am to 9.30am in the morning. The restricted hours were subsequently extended to operate between 7.30 am and 10.15 am.

All public buses, school buses, private buses with capacities for 12 or more persons, goods vehicles, emergency vehicles and police and military vehicles are exempted.

As a concession, vehicles carrying 4 or more persons are exempted. This is to encourage car pools. It was felt that such a concession can be supported on the grounds that high occupancy vehicles use road space effectively. It also lessens criticisms that the scheme favours wealthy motorists and discriminates against the less well-off motorists. Car pools also serve to reduce the burden on public transport.

The ALS was introduced on 2 June 1975. Its most dramatic impact is on road traffic into the city area. Total inbound volumes during the morning peak was halved immediately. Over the last 10 years, the city has grown by about 20% in terms of the number of jobs. Commensurate with this increase, there has been the expected upward creep in the morning peak traffic. However, the present total inbound volumes during the morning peak is still 20% less than the pre-ALS figures of early 1975.

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The ALS has succeeded in moving commuters from the car into public transport. The chart shows the modal splits of the journey to work in the pre-ALS and post-ALS periods.

Contrary to the traffic engineers' expectations, the scheme did not have the mirror effect on the evening peak traffic conditions. There is congestion during the evening peak. Part of the evening congestion is due to the cross town traffic traversing through the city. The presence of more cars on shopping & school trips & goods vehicles in the evening also account for the much higher numbers of vehicles on the road in the evening.

However, the evening congestion is of short duration. There are therefore no plans to introduce evening road pricing.

2. Increase in Parking Charges in the City

As mentioned earlier, parking charges within the Restricted Zone coupled with area licence fees, were selected as two parts of a single restraint package.

In order to influence owners of private car parks to raise their parking fees, a parking surcharge was introduced on all private car parks. The surcharge would induce car park operators to pass the increased overhead costs of operating the car parks resulting from the higher fees to the users.

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The law was also amended to require all private car-parks to be licenced. In the licensing of the car-park, the car-park authority can stipulate the minimum parking charges for season and short-term parking.

3 The Park-and-Ride Scheme

At the time of the planning for the introduction of the ALS, it was felt that an important prerequisite to the imposition of restraints on private car travel would be the provision of an attractive public transport service.

It was felt then that the quality of bus services in Singapore at that time would fall short of expectations of the motorists who were used to the comfort of his car. It was considered unrealistic to expect significant increases in capacity to cope with added demands of motorists diverted from their cars within the time frame within which it was planned to introduce the ALS. A better quality bus service wousld perhaps meet the motorist's requirements.

The only reasonable alternative that was considered feasible for early implementation was the provision of a park-and-ride service.

Eleven fringe area car parks with approximately 8,700 parking spaces were constructed at strategic locations along the major approach roads into the city area. Parking fees were kept at the low level of $10 per space per month or $0.50 per entry.

Eleven shuttle bus services were licenced to provide convenient links between the car parks and the major destinations within the Restricted Zone.

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Contrary to our expectations, motorists did not take to the Park-and-Ride Scheme in a big way.

The Park-and-Ride service met with poor response from the onset. In order to prevent the collapse of the bus companies, the bus routes were extended beyond the fringe car parks to public housing estates. To ensure that those who park-and-ride are able to board the buses during the mornings, many of the extended bus services were routed to pass the fringe car-parks.

The shuttle bus services are now well patronised and act as a supplementary service to the bus services provided by the SBS.

Alternative uses have been found to many of the fringe car-parks. Park-and-ride, however remains popular at a few fringe car parks.

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Buses

Buses form the back-bone to the public transportation system in Singapore.

The bulk of scheduled bus services on routes throughout the island is provided by services operated by the Singapore Bus Service (1978) Ltd and the Trans Island Bus Services (TIBS). Bus services are provided from 6 a.m. to midnight daily. The 2 companies operate on over 200 routes and carry approximately 2.4 million users daily with a total fleet of about 3,000 buses.

Prior to 1970, bus service was provided by 10 Chinese bus companies and the Singapore Traction Company (STC). Each company had its own area of operation on the island and its own fare structure. Effective regulation and coordination was difficult because of the large numbers of operators.

In recognition of the growing inadequacy of public transport and concern that progress in other sectors could be retarded by a lagging public transport system, a major programme for the improvement of public transport service was initiated in 1970. The much needed impetus was provided in the 1970 Government White Paper on the "Reorganisation of the Motor Transport Service of Singapore".

The Paper made a detailed and comprehensive examination of the many problems confronting the variety of public transport services. For each of these problems, appropriate remedial action was recommended.

Following the White Paper, the 10 Chinese companies were merged into 3 regional companies. The 3 together with the STC operated all scheduled bus services from April 1971. Routes were revised and a standard fare structure was introduced. Operational difficulties caused the STC to cease operations at the end of 1971. A subsequent amalgamation in November 1973 resulted in the formation of the Singapore Bus Service (SBS). As a result of the amalgamations, major revisions to bus routes were made to provide more direct travel between major activity areas.

Bus fleet expansion since the amalgamation has been considerable. The SBS owned and operated a fleet of 2,200 buses at the end of 1974. The SBS now operates about 3,000 buses. To meet the continuing growth in ridership and changes in travel pattern arising from shifts of major employment, housing and activity centres and higher expectations from a more affluent population further improvements in bus services will be necessary.

In April 1983 the Trans-Island Bus Services (Pte) Ltd (TIBS) was inaugurated to operate scheduled bus services along 2 major corridors to the northern part of the island.

In April 1984, SBS started pilot air-conditioned bus service between an HDB new town and the city to test the feasibility of using such buses.

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Urban Transport in Singapore: Lessons from Experience

Road Development in Singapore

Despite the severe restraint on car ownership and use, the island republic has embarked on a relatively ambitious road building programme to open up and serve new areas of development and to increase the capacity and efficiency of the inherited road network. Indirectly too, the road building programme has resulted in the better routing of bus services.

The biggest determinants of new travel demands are the development programmes of Singapore's 2 public bodies viz the Housing & Development Board and the Jurong Town Corporation.

The Housing & Development Board (or HDB) is responsible for the development of public housing in new towns located all over the island republic. Over 75% of the country's population is housed in high rise apartments built by the HDB which has also put in labour-intensive industries, schools, recreational facilities and local shopping centres within these towns to make them as self-contained as is possible and to minimise the need to travel.

The Jurong Town Corporation (or JTC) is responsible for the development of industrial estates in Singapore. Land is prepared and the various infrastructures laid out in well-planned industrial estates. Parcels are then leased out for private industrial users. The JTC also puts up terrace or multi-storey factoris which are suitable for lighter industrial uses.

Because the HDB and JTC are Government bodies, their development plans and programmes can be well prepared and coordinated with the road and other infrastructure agencies. New areas of travel demand can therefore be identified years ahead and this has enabled the Public Works Department (PWD) to prepare its road development programme with ease and accuracy.

In the last decade or so the PWD had spent $1.5 billion on road development. It is envisated that another $1000 million would be spent over the next 5 years in expanding the island's road network. At the end of 1984, Singapore had 2590 km of roads.

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Traffic Management

Traffic management has been an integral part of our transportation strategy. Measures were introduced to maximise the usage of the road space. These followed well known traffic engineering principles which were flavoured to suit local conditions. These measures have been concentrated around the city area where road space is at a premium.

Some of the main traffic management measures implemented in recent years include the following:

Regularising road widths - In a massive exercise carried out in 1974, road widths were regularised and excess space converted for pedestrian use. Lane marking was introduced on all roads to improve lane descipline.

Removal of obstruction - Street parking has been banned on all major roads. On minor streets in the city, parking lots are drawn. Because of the presence of wholesale centres and markets in the older parts of the city, loading and unloading activities along the main roads have always posed a serious problem. A three prong approach was taken. Firstly, a large number of such centres were relocated to outside the city area in conjunction with urban renewal. Secondly, all new commercial developments were required to provide loading and unloading bays off the main road. Thirdly, where unavoidable, loading and unloading activities at the kerbside were restricted to off peak hours.

Heavy vehicle movements - The harbour is located close to the city. It was thus customary for large vehicles to travel through the city area to reach the port. Because of their poor manoeuvrability and slow speeds, they obstruct traffic. In 1974, vehicles with 3 axles or more were banned from entering or travelling along the city roads during the peak hours of 7.30 am - 9.30 am and 4.30 pm - 6.30 pm on weekdays.

One-way Street - Because of the rectangular grid pattern of the streets in the city, about 70% of the city streets have been converted into one-way streets. This has meant simplified junction layouts and better utilisation of streets with odd numbers of lanes. It has also meant some inconvenience to bus commuters and taxi commuters. This has been reduced by ensuring that the distances between one-way pairs do not exceed 150m.

Central Traffic Control - The closely spaced junctions with traffic signals offer good scope for co-ordination (or linking). A central computer has been installed controlling 165 junctions in the city area. Communications are through telephone cables. The area is sub-divided into 10 sub-areas. Each area has 7 plans calculated using historical traffic counts. Each plan consists of the allocation of green times for each junction to suit a particular set of traffic conditions which also results in linking between them to provide a "green wave". The plans are calculated by a well known traffic programme called 'TRANSYT'. The plans are chosen to run by the computer based on a timetable. The result is an increase of travel speeds in the city by 20%.

Linking of Traffic Signals - Following the success of centralised traffic control, the scheme of linking traffic signals is being extended to major arterial routes outside the city area. This is now possible with the aid of microprocessor controllers which allow linking to one another without the use of interconnecting cables. No central computer is necessary. To date 11 major routes have been so linked.

Box Junction - A successful scheme implemented is the yellow box junction. This is to prevent locking of the junction. Under the scheme, vehicles are not allowed to enter a box junction if they are not able to clear it. In other words, they are not allowed to stay in it. The box junction scheme is simple. Nevertheless, it has resulted in better traffic conditions during the peak periods.

Taxi Operations

Taxis have been in existence for many years with the first taximeter being installed in 1963. There were no restrictions on who could own a taxi. This resulted in individuals and companies owning fleets of taxis. There were also "pirate" taxis which were private cars used by their owners to pick up fares. This sorry state of affairs existed in the 1960's.

In 1970, action was taken to eradicate "pirate" taxis. Drivers of these taxis were retrained to be taxi drivers or offered jobs as bus drivers and conductors. By July 1971, all "pirate" taxis had been eradicated. In 1966, non-transferable taxi licences were issued to encourage individual ownership of taxis, but this was beyond the means of many taxi drivers. It ended in some exploitation of taxi drivers by financiers. In 1970, the National Trade Union Congess (NTUC) formed a co-operative called COMFORT to provide financial asistance to member taxi drivers to own taxis.

Today, there are about 11,500 taxis operating in Singapore. 7,500 are operated by NTUC and 3 other companies who lease out taxis and the rest by individuals. 90% of them are air-conditioned and 40% are fitted with radiophone sets. All taxis are fitted with taxi-meters. A 7 year life span has been introduced for all taxis so as to weed out old taxis from the road.

The flag down fare is $1.20 and there is a subsequent fare of 10¢ per 375m.

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Taxis are allowed to pack up and drop passengers at any place (except in the central business district) if they do not cause obstruction. In the CBD there are 23 taxi stops. It is mandatory for taxis to stop only at these stops for discharging and picking up passengers. This is to prevent traffic congestion caused by the indiscriminate stopping of taxis.

In addition, taxi stands have been designated at large shopping centres and other heavy usage areas. Taxis can wait at these stands for passengers to arrive.

Interspersed outside the city area are taxi kiosks with telephone services to provide commuters with a demand responsive taxis service.

To encourage taxis to ply along the areas where they are needed most, surcharge schemes have been introduced. Taxis are allowed to charge a $3/- surcharge for any fare they pick up from the airport. Similarly they are allowed to charge a surcharge of $1/- for any fare picked up from the Restricted Zone in the evening peak hours.

To encourage the better utilisation of taxis a "Share-a-Cab" system is in operation. This scheme operating between the CBD and selected new towns allows passengers to share a ride at mutually agreed rates.

Various other measures are now under study with a view to ensuring that taxis remain on the road for longer periods. These include the possibility of requiring taxis to chalk up a minimum daily mileage and the use of relief drivers.

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In planning all these measures, certain basic roles have been assigned to the taxi service. Taxis are not designed for mass transportation. They merely complement buses. They provide a level of service between that of the private car and public buses.

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Bus priority measures

In a move to accord priority to buses an extensive bus priority scheme has been in operation since 1974. There are 40 km of bus lanes along the most congested parts of the city and other main roads. All bus lanes are with flow bus lanes and only operate during the morning and evening peak hours. The minimum warrant for a bus lane is 100 buses/hr during the peak hour. Bicycles are allowed to enter the bus lane. Bus lanes are cut back from the junctions for a sufficient length to allow left turning vehicles to enter and make the turn. Bus speeds have always increased with the introduction of bus lanes.

In addition, buses are also exempt from many of the turn restrictions at heavily-trafficked junctions which are applicable to other vehicles.

Vehicle-responsive traffic signals are provided at the exits of all major bus interchanges with main roads to minimise delays for departing buses.

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MOTOR VEHICLE STATISTICS - SINGAPORE 1974 - 1984

Type of Vehicle	End 1974	End 1975	End 1976	End 1977	End 1978	End 1979	End 1980	End 1981	End 1982	End 1983	End 1984
Motor-Cars	143,767	143,155	136,574	136,574	138,654	145,137	155,020	165,198	184,150	206,260	221,278
Motor-Cycles	84,849	83,145	84,018	89,842	98,248	108,051	118,345	127,722	136,899	141,569	134,693
Goods Vehicles	36,462	41,391	45,757	49,524	55,626	67,220	78,038	87,772	96,903	102,578	107,335
Public Buses	2,188	2,312	2,595	2,631	2,842	2,913	3,041	3,188	3,203	3,268	3,354
School Buses	2,076	2,088	2,091	2,170	2,268	2,394	2,445	2,530	2,736	2,733	2,645
Taxis	5,162	5,388	5,473	6,009	7,683	8,518	9,462	9,862	10,278	10,668	11,058
Others	2,362	2,899	3,356	3,204	4,063	4,496	4,990	5,533	6,107	9,212	10,959
All Motor Vehicles	276,866	280,378	279,864	289,954	309,384	338,729	371,341	401,805	440,276	476,288	491,322

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LEGISLATIONS RELATED TO PLANNING AND CONTROL OF TRANSPORT AND URBAN DEVELOPMENT IN MALAYSIA

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Transportation and urban development are inter-related. It is in the urban areas that traffic congestion occurs. This is the result of developments taking place in the urban areas. Problems of transport and urban development cannot be treated in isolation from one another. Growth in vehicular traffic is related, inter alia, to the rate of urban development. In existing urban areas development has taken place at a much faster rate than the development of road space. This is another contributing factor to traffic congestion in towns. Whilst there are legislations controlling urban development and transport in this country, some of these legislations, particularly those on transport need to be reviewed.

This Paper attempts to briefly:

- examine the existing legislations on urban development and transportation;
- assess the interaction between urban development and transport;
- identify the urban transport problems and prospects; and
- suggest changes to the existing legislations to cope with future growth.

LEGISLATIONS ON URBAN DEVELOPMENT

In Malaysia,the term `urban´ is defined as being a gazetted centre with population of 10,000 or over. Based on this definition, 41.5 percent of the total population live in urban areas in 1985.

Large and small-scale developments are continuously taking place in these urban areas, particularly so in the larger ones which include Kuala Lumpur, Penang, Johor Bahru and Ipoh.

Legislations on the planning and control of development in the urban areas are mainly in the form of by-laws adopted by the individual authorities. Although there is a Town and Country Planning Act, this has not been adopted by all the states. Under the provisions of the Town and Country Planning Act 1976, Structure Plans and Local Plans are required to be prepared by the local authorities.

Adoption of the Structure Plan System

The Structure Plan is basically a policy statement while the Local Plans are, in essence, detailed plans which specify the types of development to be undertaken in the areas to be developed. These are the actual plans for physical development.

The Structure Plan system which originated in the United Kingdom was intended to be a flexible document vis-a-vis the old Development Plan system which was found to be too rigid and time-consuming thus resulting in serious backlog in processing development applications. Flexibility in planning and control of development is desired in order to cope with future changes which may not happen as predicted. As such, the Structure Plan system calls for the formulation of policies which are to be used as guidelines in the preparation of Local Plans for specific areas to be developed in the foreseeable future, say 5-10 years.

A number of Structure Plans have been prepared by the states which adopted the Act but todate no Local Plans have been prepared yet. Apart from Kuala Lumpur and Johor Bahru most of the Structure Plans which have been prepared have not gone beyond the stage of Report of the Survey. There appears to be an unduly long gap between the preparation of a Structure Plan and the Local Plans. In the interim period, control of urban development are still being guided by the existing by-laws.

It is expected that all the states would eventually adopt the Town and Country Planning Act and Structure Plans would be prepared for all the state capitals and other major urban areas in the the states.

Introduction of the Structure Plan system into this Country is undoubtedly a step in the right direction. It is commendable that the Federal authorities saw it expedient to introduce the system for the proper control and regulation of town and country planning in the local authority areas. The bill which was presented in 1975 was enacted in 1976.

Control on Urban Development

Although a number of Structure Plans have already been prepared, its efficacy on urban development in the areas where these plans are available are as yet to be evident. This is simply because no Local Plans are available. The successful application of the Structure Plan system as an instrument for proper control and regulation of urban development in local authority areas depends on several factors.

Some of these include:

- o appropriate interim control of development before Local Plans are prepared;
- o proper interpretation of policy statements when preparing Local Plans;
- o improvement of the time-lag between Structure Plan and Local Plans; and
- o strict adherence to the plans.

o Appropriate interim control. From past experiences it has been found that it takes 2-5 years to prepare an Urban Structure Plan and it takes even longer to prepare Local Plans. During this period of plan preparation, development would have taken place in the urban area. It is, therefore, important that appropriate interim control of development must be carried out. This is, perhaps, the most difficult part of the exercise. Suitable strategy must, therefore,be formulated to ensure that approved developments tie in with the policies of the Structure Plan.

o Proper interpretation of policies. Proper interpretation of the policy statements contained in the Structure Plan is essential when preparing Local Plans. While one of the main features of the Structure Plan is its flexibility in land-use allocation, it must, however, not be construed that Local Plans can be prepared independently of the Structure Plan or a complete departure from the policy statements. Flexibility in this case should not be misinterpretated as the need to make unnecessary changes or deviate from the original proposal.

Take for an example, a Structure Plan may suggest that a housing area be targetted for a certain population, this target population should be adhered to but the flexibility would be the density which it could be applied to the sub-areas. It may be found later that some sub-areas warrant increase in densities because of changes which have occurred faster than projected and some areas may not require any increase in density. The Structure Plan is a broad framework within which the Local Plans must conform. The policies once formulated should not be changed.

o Improvement of time-lag. The time-lag between Structure Plan and Local Plans must be improved if proper control of urban development is to be carried out. The Structure Plan would remain an ineffective document if there is no Local Plan to guide the development in the urban areas.

o Adherence to the plans. When the Structure Plan and the Local Plans are prepared it is important that strict adherence to these plans be maintained. Applications for urban development must conform to the adopted plans. Any major departure from the plans would, needless to say, throw the plan out of gear. Whilst it is appreciated that sometimes development applications are approved based on political decisions vis-a-vis technical evaluation, these should be limited to as few instances as possible.

LEGISLATIONS ON ROAD TRANSPORT

Legislations on road transport in this Country were introduced much earlier than legislations on planning or physical development. Legislations were in force before the introduction of the motor vehicle into the Country.

Historical Development of Road Transport Legislations

The first piece of legal document on road transport was introduced in 1990. It was known as the Vehicles Enactment 1899. This Enactment was concerned with non-mechanically-propelled vehicles which include horse carriages and rickshaws.

With the advent of the motor vehicle into the Country a new legislation was introduced. Known as the Traction Engines and Motor Cars Enactment 1912, this Enactment was limited in scope and was amended several times to cope up with changes. It was in operation for 12 years until a new enactment was introduced in 1928.

The Motor Vehicles Enactment 1928 was an improvement over the earlier enactments. It attempted to plug the loopholes of the earlier enactment.

A milestone in road transport legislations was established in 1937 with the introduction of the Road Traffic Enactment 1937. It was a very comprehensive document in those days and it consolidated all previous enactments. Several new features were introduced, but 2 of the important ones which remain todate were:

- the introduction of third party risks; and
- the issuance of different categories of licences for commercial vehicles.

The Enactment was supplemented with 16 sets of subsidiary legislations known as Rules. The subsidiary legislations dwelt specifically on different aspects of road transport, for example, a set of Rules governed speed limits such as the imposition of speed limits in built-up areas, the amount of fines or penalities to be imposed for speed offences, etc. The 1937 Enactment remained in operation for 21 years.

In 1958 a new legislation was introduced. It was known as the Road Traffic Ordinance, 1958. This Ordinance must surely hold the record of being the oldest piece of legislation on road transport in operation. It was introduced in 1958 and after 27 years it is still in operation. Numerous amendments were made to this Ordinance since it was introduced and it is understood that a completely new legislation is currently being drafted.

The 1958 Ordinance was an improvement over the 1937 Enactment and it incorporated several new features but 2 notable ones were:

- the introduction of 2 more classes of licences for commercial vehicles, contract A & D licences; and
- preference given to Bumiputras to enable them to enter the transport industry.

The Ordinance is supplemented with 14 sets of Rules which are amended versions of the Rules of the 1937 Enactment.

All the traffic and road transport legislations were modelled on British road and rail transport acts and they governed both public and private transport.

Control on Public Transport

The Road Traffic Ordinance 1985 requires all operators of public transport such as bus services to have a service licence. The licences are granted by the Federal Licencing Board which has the power, when granting a licence, to specify the route to be serviced, the time and fare table to be followed and the equipments to be used. The Board also has the power to attach special conditions to the public service licences and also to suggest or negotiate with applicants or present holders of licences for any extension of the services offered to meet public requirements.

Although the issuance of licences by the Federal Licencing Board ensures uniformity in application of rules and practices this would also tend to isolate the licencing authorities from local problems and conditions which local authorities are in a better position to appreciate. Insofar as public transport matters are concerned no power is delegated to the state or local authorities. All policy matters and licencing are drafted by the Federal Licencing Board. This is one of the major areas which could be included in the general review of the existing road transport legislations.

URBAN DEVELOPMENT AND TRANSPORT INTERACTION

The amount of traffic attracted to an urban centre depends on the type of development taking place in the urban centre and also the vehicle ownership in the area. Different types of development generate different magnitude and type of traffic. Increase in vehicle ownership result in increase in travel demand and car usage which means more trips being made.

Major Traffic Generators

Commercial development generally attracts more traffic than office development. A recent study undertaken by MINCONSULT at 10 of the office/shopping complexes in Kuala Lumpur produces some interesting results.

The study reviewed that on average an office/shopping complex attracts:

- 20 car trips per 1,000 sq.ft. of commercial floor space;
- 5 car trips per 1,000 sq.ft. of office space;

- 130 person trips per 1,000 sq.ft. of commercial floor space; and
- 30 person trips per 1,000 sq.ft. office space.

The study also reviewed that the average parking duration is:

- 1.5 hours at supermarkets;
- 2.4 hours at shopping complexes; and
- 4.4 hours at offices.

It means that for a large complex like Sungei Wang and Bukit Bintang Plaza, some 130,000 person trips are attracted to the complex everyday. These include workers as well as shoppers. About 16 percent of these person trips are made by car thus producing some 20,000 car trips per day. In addition to these car trips some 20 percent of vehicle trips which include motorcycles and commercial vehicles are attracted to the complex. Therefore, a total of some 25,000 vehicle trips are attracted to the complex.

With such magnitude of traffic which is in fact, greater than that generated in a small town, it is important that the location of such complexes be carefully considered and the traffic circulation properly planned.

Kuala Lumpur City Hall has rightly imposed on all recent applications for development of office/shopping complexes to be accompanied with a traffic study before the plan would be considered for approval.

Car Ownership and Travel Demand

As the number of cars increases the travel demand or number of trips made also increases. For example, in Kuala Lumpur in 1973, 1.1 million person trips were made and the car ownership then was about 65,000 cars. The travel demand has increased to 2.4 million person trips in 1980 with car ownership reaching 125,000. These figures show that the average number of person trips per passenger car has increased from 16.8 to 19.2 from 1973-1980.

Travel demand in Kuala Lumpur has increased at a rate of about 12 percent per annum over the period of 1973-1980. This was a much greater increase when compared to the period 1964-1973, which registered an increase of about 5 percent per annum. In 1964 total travel demand was only 700,000 person trips.

With the increase in car ownership, the mode of travel has also changed considerably. In 1964 about 55 percent of the total person trips in Kuala Lumpur were made by passenger car and the remaining 45 percent by public transport. Trips by public transport, however, have decreased steadily over the 16-year period while car trips have increased. In 1973 person trips by public transport has decreased to 35 percent and further decreased to about 25 percent in 1980. These changes in travel demand and travel mode were to be expected.

As shown in table 1, car ownership in Peninsular Malaysia has been increasing at a consistent rate of 10-12 percent per annum but growth of motorcycle ownership was much faster, achieving a rate of 13-14 percent per annum.

In Penang State, growth of car ownership was slower, registering 9-10 percent per annum over the same period. Motorcycles, however, have shown a faster growth since the 1980s compared to Peninsular Malaysia (see table 2). It was estimated that about 70 percent of the car ownership in Penang State were on the Island. Total travel demand on the Island was estimated at 1.1 million person trips in 1980.

Problems and Prospects

All the 4 major urban areas in Peninsular Malaysia experience urban congestion. As mentioned earlier, the problem of urban congestion is attributed, in general, to increase in travel demand and car usage, rapid growth of urban development and inability of road development to keep pace with urban development.

The problem will deteriorate further with the increase in population, household income, car ownership, travel demand and urban development. The prospects for alleviating this problem are not entirely dim, particularly in cities like Kuala Lumpur and Penang which have public urban transport. This could be improved to divert person travel from private cars to public transport.

In addition, measures could be taken to provide a road network with easy access for vehicular traffic to all parts of the city.

For long-term planning, it may be necessary to consider vehicle restraint measures.

To implement the above, it is necessary that proper legislations are available, to overcome any constraints or obstacles when translating the plans to action.

TABLE 1 VEHICLE REGISTRATIONS IN PENINSULAR MALAYSIA

Year	Car	Taxi	Lorry and Van	Bus	Sub-total	Motorcycles	Total
				(vehicles)			
1965	154,300	5,200	41,900	3,800	205,200	175,000	380,200
1979	570,819	11,736	126,142	11,789	720,486	1,116,569	1,837,055
1980	668,576	12,765	143,983	12,618	837,942	1,285,900	2,123,842
1981	750,344	14,583	160,970	13,340	939,237	1,467,187	2,406,424
1982	832,456	16,582	172,333	14,380	1,035,751	1,623,756	2,659,507
1983	916,728	17,765	186,823	15,526	1,136,842	1,833,590	2,970,432
				(average annual growth rate - percent)			
1979-1983	12.6	10.9	10.3	7.1	12.1	13.2	12.8
1965-1980	10.3	6.2	8.6	8.3	9.8	14.2	12.2
1980-1983	11.1	11.6	9.1	7.2	10.7	12.6	11.8

Source : Road Transport Department, Kuala Lumpur.

TABLE 2 VEHICLE REGISTRATIONS IN PENANG STATE

Year	Car	Taxi	Lorry and Van	Bus	Sub-total	Motorcycles	Total
			(vehicles)				
1965	20,975	214	3,211	400	24,800	27,126	51,926
1979	65,352	474	11,404	1,073	78,303	124,984	203,287
1980	71,669	534	12,541	1,161	85,905	134,979	220,884
1981	78,422	615	13,929	1,219	94,185	152,068	246,253
1982	86,910	776	15,045	1,340	104,071	169,538	279,609
1983	94,896	871	16,193	1,429	13,389	198,810	312,199
			(average annual growth rate - percent)				
1979-1983	9.8	16.4	9.2	7.4	9.7	12.3	11.3
1965-1980	8.5	6.3	9.5	7.4	8.6	11.3	10.1
1980-1983	9.8	17.7	8.9	7.2	9.7	13.8	12.2

Source : Road Transport Department, Kuala Lumpur.

o Efficient public transport. An essential feature of an efficient public transport system must be its ability to offer a level of service comparable to the convenience and comfort afforded by personal transport.

An efficient public transport system may consist of only 1 mode (e.g. bus transport) or a combination of 2 or more modes (bus and rail) as in the case of a mass transit system. This depends largely on passenger volumes and concentration of travel along the principal corridors.

Another feature of a good transport system must be its ability to meet differing levels of demand. For example, demand along the main corridor is much higher than that on feeder roads on the outskirt of the urban area. A standard size bus may be suitable to serve the main corridor but smaller buses such as mini-buses would be more appropriate for feeder services.

o Good road network. A good road network should permit convenient and easy access of vehicular traffic to all areas of the city. Although congestion is inevitable during peak hours, a certain level of congestion is normally acceptable provided convenient access is available to the motorists.

Conventional road system such as the "ring road and radials" and "grid iron" could provide free flow of traffic if all the intersections are grade-separated or complete segregation of pedestrians from vehicles. These are, of course, expensive propositions and could only be justified if traffic volumes are high enough.

o Vehicle restraint. Vehicle restraint may be considered as a long-term measure but it is essential that an efficient public transport system and a complete road network are available before vehicle restraint measures could be successfully implemented. There are many types of vehicle restraint measures but generally they can be classified into the following groups:

- o area licencing;
- o parking charges; and
- o road pricing.

Area licencing is the use of special licences issued on a daily or monthly basis to vehicles entering certain areas of the town, for example, the system presently in operation in Singapore. Area licencing is usually supplemented with car pooling which

means that passenger cars which have full occupancy are exempted from paying to enter the central business district (CBD) during peak hours.

The impact of area licencing on CBD congestion is perhaps, arbitrary. It might tend to encourage those who do purchase the permits or area licences to make additional use of the vehicles to get their monies' worth. It also tends to shift traffic congestion from the peak hours to the off-peak hours. The main advantage of this system is the cost of implementation which is relatively low if stringent enforcement is maintained.

Parking charges can be used as a form of vehicle restraint. Parking fees could be raised to a certain level to discourage people from bringing their cars to the CBD. Differential parking charges could also be enforced, if certain types of trips were to be discouraged, for example, if it was found that a high proportion of the vehicle trips to the CBD are work trips and the desire is to discourage people from bringing their cars to work, then the parking charges can be manipulated in such a way that the parking charges for the morning peak hours say, 7.30 am - 9.30 am could be higher than the other hours.

The use of parking charges as a vehicle measure has several merits in that it is relatively simple to implement as no expensive equipment is involved and it is inexpensive to carry out as it does not involve any large capital outlay.

Road pricing as a form of vehicle restraint is based on the principle that payment must be made for the use of road space in congested areas. Motorists who value their trips more than their fee they have to pay, will use their vehicles while those who do not, will not use their vehicles. This will eliminate the volume of vehicles into the CBD. This method has the advantage that it can vary impact by time of day and also by geographical areas, for example a higher rate could be charged on vehicles entering the most congested areas during the highest peak hours.

The system based on the road pricing principle is presently being experimented in Hongkong. The pilot project known as Electronic Road Pricing System is analogous to the telephone billing system. Private vehicles are fitted with an electronic gadget which will be picked up by sensors when the vehicles pass through the congested areas where charges are imposed. These charges which could vary according to the degree of congestion of the area, would be recorded and at the end of the month, a bill stating the total amount and detailing the trips recorded will be sent to the car owner.

This method is the most sophisticated and ideal form of vehicle restraint. However, the main disadvantage is that it encroaches

onto the individual's privacy. Since the pilot project started in Hongkong strong protests were received from the public.

o Mass transit system. It has become fashionable in most Asian cities nowadays to have a mass transit system, either in the form of light rail or heavy rail capable of transporting upto 80,000 passengers per hour (Hongkong Metro).

The cost of a mass transit system is usually astronomical and could only be justified if the ridership is high enough. 3 main factors must be present before one can seriously consider building a mass transit system. These are:

- o population and daily urban travel are of sufficient magnitudes;
- o population is concentrated within a narrow corridor; and
- o car ownership is relatively low.

These conditions are not prevalent in most, perhaps all, the major urban areas in Malaysia and therefore a structurally-guided mass transit system is not justified.

THE NEED FOR NEW LEGISLATIONS

If proper control of development in the urban areas and provision of a balanced transportation system are to be achieved, new legislations must be formulated. New legislations on road transport are in dire need to replace the existing Road Traffic Ordinance which is now almost 30 years old and is somewhat antiquated.

Suggested Areas for New Legislations on Road Transport

This Paper suggests that some of the areas where new legislations should concentrate include:

- o the planning and management of bus transport;
- o provision of a balanced transportation system in the urban areas;

- licensing and routing of commercial vehicles; and
- utilisation of private vehicles.

o Planning and management of bus transport. Existing legislations on bus transport are rather restrictive. All the control are in the Federal Licencing Board. It is suggested that the state and local authorities be involved in the licencing of bus transport and this will include the planning of bus routes as well as the control of bus operations and bus fleet. Since local authorities have a better knowledge of local conditions and the need for bus transport, it is logical that they should have a say in the planning and management of bus transport within their areas.

o Balanced transport system. Legislations should be introduced to ensure that the various modes of public urban transport such as stage buses, mini buses and taxis are co-ordinated and do not result in wasteful competition and that they provide an overall balanced transportation system. The legislations should also ensure that the modes of public transport are serving the purposes for which they are intended. For example, in Georgetown the urban taxi service does not actually fulfil its function in providing intra-urban service. Instead the taxis are virtually providing inter-urban service because of the restriction requiring them to stand at allocated taxi terminals and they are not allowed to ply for fares on the streets.

o Licensing and routing of commercial vehicles. Existing legislations on commercial vehicles, in particular on its permissible laden weight are unrealistic. Most, if not all, commercial vehicles exceed their permissible laden weight and these cause undue congestion or delay to fast-moving vehicles when the commercial vehicles travel on the urban roads.

It is suggested that realistic loads be permitted and that commercial vehicles be prohibited to enter certain roads in the urban areas. This restriction should not apply to all commercial vehicles but only to those exceeding certain weight.

o Private vehicle usage. Legislations on utilisation of private vehicles would have to be introduced when vehicle restraint measures are implemented in the long-term plan, for example, legislations would have to be introduced to require private vehicles to be fitted with sensors if the electronic road pricing system is introduced.

Additional Planning Legislations

As discussed above, legislations on urban development are generally adequate with the Town and Country Planning Act but what is lacking is the interim development control. It is, therefore, suggested that legislations be drawn to control development during the interim period before introduction of the Town and Country Planning Act and the availability of Local Plans.

CONCLUSIONS

The conclusions which could be drawn from the above discussion are that:

- it is desirable to introduce legislations on the control of urban development during the interim period before the Structure Plan and Local Plans are prepared;
- the problem of traffic congestion in urban areas will deteriorate further with increase in vehicle ownership and household income but these are not entirely insurmountable as there are measures which could be implemented; and
- there is an urgent need for new legislations for urban transport to replace the existing legislations which are now outdated.

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LEGISLATION RELATED TO THE PLANNING AND CONTROL OF TRANSPORT AND URBAN DEVELOPMENT - THE UK EXPERIENCE

1. Introduction

Historically the UK has a long and strong legislative tradition in relation to the planning and control of transport and urban development. Given Britain's "colonial" past it is not surprising that much of this legislation has been adapted, to a greater or lesser extent, to meet conditions in countries other than the UK. Whether such a practice is desirable or not is debatable, and perhaps more attention should be focussed on this point. However, as I have been asked to talk about the UK experience of legislation concerned with the planning and control of transport and urban development, I will do so, focussing first of all on the issue of urban development.

2. Planning and Control of Urban Development - the Current UK Experience

2.1 Development Planning and Legislation

The system of land use controls introduced by the Town and Country Planning Act 1971 and the Local Government Act 1972, forms the basis of the present legislation concerned with the planning and control of urban development in England and Wales. Similar legislation was also enacted for Scotland. This legislation is primarily seen as being concerned with

land use, the objectives of which were described by the then Chief Planner in central government as

"(a) clarifying levels of responsibility so that only major policies and objectives are brought before the Minister for approval, while matters of detail and local land use are settled locally;

(b) providing more positive guidance for developers and development control;

(c) increasing public understanding of the system and participation in the plan-making process;

(d) simplifying planning administration" (James 1965)

Subsequent advice from central government clarified this role, and the relationship between land use planning and social and economic policies, when it expanded on the main functions of the structure plan as being "...(b) to interpret national and regional policies in terms of physical and environmental planning for the area concerned. National and regional policies tend to be primarily economic and social...: structure plans represent the stage in planning at which such policies are integrated with the economic, social and environmental policies of the country and expressed in terms of their effect on land use,

environmental development and the associated transport system..." Similar advice is repeated in the current DOE circular dealing with the development plan, Circular 22/84.

Thus it is clear that in the United Kingdom town and country planning is seen by government as part of a wider set of inter-related planning activities which operate in different areas (e.g. housing, health, education, social services, transport, employment); at different levels (e.g. national, regional, sub-regional, local) and through different agencies (e.g. ministries, ad hoc bodies, local authorities) to achieve the social and economic change sought by the founders of the town planning movement. The intention is that town and country planning will contribute to the achievement of this change by shaping and guiding development and the use of land. Thus the role of the town and country planner in society is concerned solely with development and land use, operating implicitly within a framework set by higher order social and economic policies.

This somewhat narrow view of the role of town and country planning would be perfectly acceptable and workable in practice

- if there were a clearly established framework for planning through which national objectives for social and economic change could be coherently presented;

- through which more specific sectoral objectives and policies relating to issues such as the economy, income, employment, industry, agriculture, natural resources, housing, social services, and transport could be presented in an integrated way at the national level;

- through which these national socio-economic and sectoral policies could be amplified in relation to the various regions of the country;

- through which these 'regional' interpretations of socio-economic policy could be translated into a spatial structure, which in turn could be translated where appropriate into local detailed plans, and projects for development and implementation. If such a framework existed then the role prescribed in legislation for town and country planning would be feasible.

Regrettably no such framework exists in the United Kingdom. At the national level policies for social and economic change are articulated in a disjointed way through white papers, green papers, acts of Parliament, departmental circulars and memoranda, and fiscal measures. With the exception of the short-lived National Plan in 1964 (Department of Economic Affairs 1964) no attempt has been made to present a co-ordinated picture of

(a) national objectives, policies and proposals for social and economic change;

(b) more specific sectoral objectives and policies relating to issues such as the economy, industry, housing, natural; resources etc;

(c) the allocation of resources to implement these policies, and

(d) the broad inter-relationship between these policies and regional and urban development.

At the regional level in England and Wales attempts to relate national socio-economic and sectoral policies to specific regions have at best been half-hearted. For the period 1965-79 the Regional Economic Councils attempted to prepare broad advisory strategies for social, economic and physical development, although the quality of these strategies varied enormously. In some parts of the country local authorities took the initiative in attempting to plan at this level and created standing conferences on regional planning, e.g. West Midlands Planning Authorities Conference (WMPAC 1974) whilst in other parts of the country sub-regional planning studies were produced either by independent teams for a group of local authorities, e.g. Coventry-Solihull-Warwickshire or by teams commissioned by

central government to examine the feasibility of large scale planned expansion of selected areas of the country, e.g. South Hampshire. Generally, however, these plans or reports failed (a) to amplify the national socio-economic sectoral policies insofar as they affected their particular region and (with the exception of WMPAC and the sub-regional studies) (b) only rarely produced positive proposals for action. Thus the essential socio-economic framework which urban development planning (or town and country planning) needs if it is to be used in a positive way to contribute to socio-economic change, is missing. Development planning, despite having its narrow but clearly defined role, is forced to operate in a vacuum. How can it be used to give physical expression to national social and economic policies through structure plans and local plans when those policies are not clearly, and coherently presented? The very role chosen for development planning by the legislators is one which it cannot presently achieve. This conceptual weakness which underpins our current system of land use planning has inevitably had a pronounced effect on the role of the planner in our society. It quite clearly prescribes a narrow departmental, land use based role for the planner. At the same time, by not providing a coherent higher order planning framework, it makes the successful operation of that narrow role almost impossible.

This imperfect situation is made even more difficult by the other implicit but fallacious assumption underpinning the legislation which provides for the current land use planning system. i.e. that planning as an activity is neutral and objective. If it were then the idealised and comprehensive planning framework needed for a narrowly based land use planning system to operate effectively might solve the problems encountered for the planner in identifying his role. But planning is not neutral. Rather it is centrally involved in the distribution of scarce resources; conflicts of interest are an inevitable consequence of that distribution. Planning far from being apolitical, is essential a political activity concerned with "... the regulation of disagreements about matters of public choice." (Rose 1974). As such it is inevitably partial; ad hoc; subject to pressures and much influenced and constrained by the political powers of the day.

In these circumstances, with an adequate planning framework, and the assumption that the planning function is apolitical, is it any wonder that the planner is confused and uncertain as to his role, and the purpose of development planning as provided by statute? On the one hand the planner is tempted to extend his role to encompass the complexities inherent in the consideration of economic, social and physical issues. On the other hand he is tempted to cautiously retreat to a

position which is concerned with the use and development of land.

2.2 The Changing Role of Development Planning 1968-79 As Reflected in the Legislation

In the years following the introduction of the Town and Country Planning Act 1968, planning practice operated as if a comprehensive and rational system of planning was in being. The structure plan was seen as "... a policy vehicle and not a means for expressing physical development proposals in detail. It had to set out the social, economic and environmental strategies for the area." (Drake et al 1975). Advice from central government through various publications, e.g. Management Networks: A Study for Structure Plans; (Doe 1971) the Development Plans Manual (Doe 1971) encouraged this view, as did the insistence of the report of the Planning Advisory Group that the new development plans should be based upon "... a far greater understanding of the social and economic determinants of urban development." (PAG 1965). Planners attempted to produce plans based on a clear articulation of social, economic and environmental aims and objectives; alternative futures were forecast and evaluated using complex computer based models; rationality and the systems approach dominated the profession.

Within a matter of years this broad approach was challenged and local authorities were advised to be selective with regard to the policy content of structure plans; and to concentrate on the key issues of structural importance to the area concerned, i.e. to produce a mainly physical development policy vehicle which took account of social and economic matters (Circular 98/74). This advice whilst being consistent with central government's view of the role of town and country planning, ignored the difficulties of the system operating in a socio-economic vacuum.

During this period the position of the structure plan as almost the only formulation vehicle was challenged with the introduction of a number of new policy-making processes in the public sector, e.g. the Housing Act 1969 introduced the General Improvement Area as a means of stimulating area based improvement; Transport Policies and Programmes (TPP'S)- in effect annual plans for investment into transport for a five yearly period - were introduced in 1975; Housing Strategy and Investment Programmes (HIPS) in 1978; the Transport Act 1978 introduced the Public Transport Plan (PTP); the Housing Act 1974 introduced the Housing Action Area (HAA). Industrial Improvement Areas (IIAs) followed. The Water Act 1973 established the regional water authorities, who began to prepare their own plans and policies; the Local Authority (Social Services) Act 1970 created separate departments for social services within

local authorities; the National Health Service Reorganisation Act 1973 created the regional and area health authorities who sawe the reorganisation an opportunity "... for health care planning to be comprehensive and co-ordinated with the planning of related local authority services", (DHSS 1976) whilst inner city problems have been singled out for special treatment under the urban aid programme and the Inner Urban Areas Act of 1978. The net effect of these changes, which took place under both Labour and Conservative 'centrist' administrations, was to

(a) force town and country plannning to retreat to the position ear-marked for it by statute - a concern with the use and development of land; and

(b) to introduce a short time scale, resource based approach to planning which has either an area or problem focus.

The indications are that these changes and additions to the system were introduced in an ad hoc, pragmatic way. By contrast the changes to the system which have been introduced since the current Conservative Government took office would appear to be consistently and systematically seeking to change the very basis of the comprehensive town and country planning system first introduced by the Town and Country Planning Act 1947.

2.3 **Changes to the System May 1979-1983**

The underlying objective of the current Conservative Government is to regenerate the economy; to make Britain more productive and competitive in trading terms. Shortly after the last election the government made it clear that town and country planning is to contribute to this regeneration by becoming more positive and efficient; that the private sector is to become more involved in environmental and planning matters; that the system is to be used to conserve the nation's heritage.

The actions of this Conservative Government since 1979 in modifying the system of town and country planning confirm that their objectives for changing the emphasis of the system were more than good intentions. The cumulative effect of the changes introduced to date is a re-affirmation that town and country planning has a limited and specific concern with land use allocation, and a further limitation on the powers of local planning authorities through the formal involvement of the private sector and the centralisation of important decisions on development proposals. Early in the life of this government Stuart Gilbert, then Junior Minister responsible for planning, suggested that town and country planning could make a contribution to the *regeneration of the economy* by not taking enforcement action against unauthorised small businesses, especially transport operations, unless a

replacement site was available.[1] This informal advice was followed by Circular 22/80 Development Control - Policy and Practice, which gave in slightly more formal terms the same advice, as well as setting out the role that development control could play in encouraging business activity and the formation of small businesses. (Doe 1980) The General Development Order was amended in 1981 and increased the limits of permitted development for industrial applications, as well as exempting from the need to have planning permission change of use from light or general industrial use to warehouse use or vice-versa of premises of 235m^2 or less. Land in public ownership surplus to the statutory requirements for which it had been acquired was (and is) to be disposed of to the private sector, whilst in December 1981 the need to obtain an Industrial Development Certificate to carry out certain types of industrial development in the more prosperous parts of the country (primarily the South-East and the West Midlands) was revoked[2] These changes were designed to remove from industry some of the constraints imposed by the planning system, which were seen as inhibiting the growth of the economy.

The abolition of IDC controls effectively removed the redistributive teeth of post 1945 industrial location policy and in doing so made the achivement of the social-welfare objectives first established with Barlow to achieve a

reasonable balance of industrial development throughout Great Britain no more than a pipe-dream. (Barlow 1940) A land-use based planning system was pushed farther towards its land-use basis.

Attempts by the government to *involve the private sector* in planning have been successful. Perhaps the most obvious instance is the establishment of the Financial Institution Group (FIG) consisting of 26 managers seconded from financial institutions to the DOE for one year, following the Toxteth riots (Liverpool 1982), to develop new ideas and approaches for securing urban regeneration. The proposals from FIG which have secured the most enthusiastic supportfrom then government are those which involve co-operation between the public and private sectors - the best known of which is the urban development grant, whereby public money is allocated to support urban development proposals put forward jointly by local authorities and private developers acting in partnership.[3]

Operation Groundwork - a five year project to transform 133 square kilometres of urban fringe around St.Helens, which was subsequently extended to become Groundwork North-West - also attempts to involve the private sector centrally; the Derelict Land Act 1982 attempts to involve the private sector as well as statutory undertakers and nationalised industries in the reclamation of derelict land by paying

grants of up to 80% of the net loss incurred in reclamation, whilst the appointment of two prominent businessmen to chair the Merseyside and London Docklands Urban Development Corporations was seen as a move the establish confidence and support from the private sector in restoring and regenerating two of the most neglected areas in the country.[4]

All these changes can be justified in one way or another, e.g. using private sector money for public good; using private sector expertise. However, the implications of the changes are that the town planning system, such as it was, is pushed gently into a more positive concern with land use and development matters. At the same time it becomes further fragmented and even more difficult to co-ordinate.

However, it is in its attempts to make the planning process speedier, more efficient and positive that the changes introduced by the government are transforming the system in quite fundamental ways. The establishment of enterprise zones, task forces and urban development corporations; the introduction of the urban development grant; and the use of special development orders all point to a concern to focus on dealing with major problem issues and/or areas in an isolated way, at the expense of a more comprehensive and inter-related approach. At the same time the modification of structure plan policies by the Secretary of State prior

to their approval suggests that a more restricted approach is being adopted towards social and economic policies.

The enterprise zones - 11 established and more recently designated - are seen by central government as a "... bold new experiment ... where businesses can be freed from much detailed planning control and from rates."(King 1982) They will last for ten years, and their prime aim is to see how far industrial and commercial activity can be encouraged by the removal of tax burdens and some statutory planning and other controls. In size the eleven designated zones vary from 50 to 400 hectares, and all contain land ripe for development. Although some planning controls have been maintained in the zones, their introduction marks a further reduction in the scope of the town and country planning system to influence the form of the built environment. Whilst this in itself may be no bad thing the fact that central government can proudly advertise that "... Enterprise Zones are not part of regional policy, nor are they directly connected with other existing policies such as those for inner cities or derelict land[5] supports the suggestion that the system is being modified to take positive but isolated action on what are seen to be specific problem issues and/or areas. A concern for the inter-related nature of social, economic and physical problems is noticeably lacking in this attitude - an impression which is re-inforced by the decision of the Conservative Government

in 1979 to abolish the Regional Economic Planning Councils which were at least credible vehicles for attempting to plan at a regional scale.

The Local Government, Planning and Land Act 1980 makes provision for the Secretary of State to designate an *urban development area* with a view to securing its economic, social and physical regeneration. An ad hoc body - *the urban development corporation* - is appointed to achieve that regeneration. In England the areas designated as urban development areas must be within a metropolitan district(s) or an inner London borough. The motivating factor for the Secretary of State in designating an urban development area is that it must be in the national interest.[6] To date two such areas have been designated and are the responsibility of the London Docklands and the Merseyside Development Corporations respectively.

The objectives of these development corporations are to bring land and buildings into effective use; to encourage the development of new industry and commerce; to create an attractive environment; and to ensure that housing and social facilities are available to encourage people to live and work in the area. To achieve these objectives the development corporations are given extensive powers to acquire, manage, reclaim, and dispose of land and other property; to carry out building and other operations; to

seek to provide basic infrastructure services such as water, gas, electricity; to carry on any business or other undertaking to achieve their basic objective. In addition to these general powers, specific powers are provided in the Local Government, Planning and Land Act 1980 relating to - *the acquisition and disposal of land*, e.g. transfer of land from local authority, a statutory undertaker or other public body to the development corporation; - *planning and development control*, whereby the Secretary of State having approved proposals for the regeneration of the deveolopment area submitted to him by the development corporation, may make a special development order granting automatic planning permission for any development of land which is in accordance with the proposals previously approved by him. - *other controls* normally undertaken by the local authority, e.g. building control, control of advertisements, stop notices.

The concept of the urban development corporation was vigorously opposed by the local authorities, the opposition parties and the unions - largely on the grounds that the corporations are not politically accountable to a local electorate and that the rationale for their introduction was based on a false premise, i.e. that administrative and organisational problems accounted for the decline of the areas designated as urban development areas, rather than structural economic social and political factors.

Although in spatial terms the two designated development areas do not significantly reduce or fragment the role and scope of town and country planning, the principle of the concept marks a severe threat to the nature and role of town and country planning. If further and more extensive development areas were designated, and given the full powers the Local Government, Planning and Land Act 1980 provide, then the effectiveness of the town and country planning system will be further reduced. Ad hoc bodies which are not politically accountable will be responsible for producing and implementing investment and development strategies for areas of our inner cities in a way which ignores the wider implications of those developments. Once more positive but isolated action is being taken on what are seen to be specific problem areas and/or issues. At the same time further power is concentrated in the hands of central government.

The same philosophy of taking positive action on particular problem issues or areas underpins the introduction of *the task force* as a new element in the government's attempts to wrestle with the problems of decline in our major towns and cities. Following his visits to Merseyside to explore at first hand the social, economic and physical problems in the area, the then Secretary of State announced in October 1981 that he would head a task force to be established in Merseyside.[7] The role of this task force is described as

being to "... bring together and concentrate the activities of central government departments and to work with local government and the private sector to find ways of strengthening the economy and improving the environment in Merseyside."[8] The task force, the responsibilities of which extend beyond the boundaries of Merseyside to include the whole of the Merseyside Special Development Area and Runcorn and Skelmersdale New Towns, was criticised when it was introduced on the grounds that it created a new tier of government to co-ordinate the work of central government with that of the local authorities.[9]

Whilst the task force concept does challenge the traditional role of the local authorities in dealing with these issues, and concentrates more planning power in the hands of central government, the way in which it has been introduced in Merseyside suggests that by 1981 Heseltine was beginning to understand that the problems facing the declining industrial centres of the UK cannot be isolated and treated by relatively small ad hoc area based approaches.

An even greater threat to the powers of local planning authorities is the potential use of *special development orders* (SDOs) provided for in the 1971 Town and Country Planning Act to grant planning permission. The consultation letter from the DOE to local authorities dealing with SDOs issued in 1981 states "The purpose of making fuller use of

SDOs would not be to make any general relaxation in development control, but to stimulate planned development in acceptable locations, and speed up the planning process."[10] Critics of the proposal at the time commented that whilst the use of SDOs could lead to flexibility in implementing the system, it could also result in a loss of local control over certain categories of development, with an inevitable reduction in local democratic control over the planning process.[11] The way in which SDOs have been used, or their use threatened, tends to confirm that local democratic control of important development control issues will be removed.

The linking of an SDO with an architectural competition for the South Bank was the first indication that this change in central-local government relations was likely to become a reality.[12] The use of an SDO to grant planning permission for the Mercury consortium's telecommunications network tended to blur the issue as it was generally accepted as being a sensible application of SDO powers.[13] However, subsequent events make it clear that this government intends to use SDOs as a means of securing the implementation of development proposals in the face of strong opposition from the local authorities directly concerned: e.g. the Vauxhall Cross SDO which granted planning permission for the winning design in an architectural competition, despite opposition

from the local authority and the M.P. representing the area.[14]

Despite these apparently ad hoc and incremental changes, it can be argued that in practice the town and country planning system introduced by the 1968 Town and Country Planning Act is still largely intact. The county councils are still responsible for the production of structure plans, the district councils for the production of local plans and development control. Since 1979 the Secretary of State has only marginally modified the system

- by making provision for structure plan modifications to be approved without an examination in public;

- by reducing the period for public participation;

- by making provision to dispense with the local plans public local enquiry; and by transferring some development control responsibilities from country to district authorities.

Thus it could be argued that this government has not seriously interfered with the town and country planning system introduced following the report of the Planning Advisory Group. However, the modifications the Secretary of State has made to structure plans submitted to him for

approval, and the provisions of Circular 22/84 in relation to development plans suggest that narrow land use allocation basis of the system is to be given even greater prominence in the immediate future.

The evidence suggests that in approving structure plans the Secretary of State is consistently re-inforcing the narrow land use role of the town and country planning system. In his decisions he is only allowing social and economic policies to be retained in the structure plan where they are used as reasoned justification in support of land use policies. Whilst this is entirely consistent with the legislative view of the role of the town and country planner, the absence in England and Wales of the requirement for local planning or any other authority to produce a clearly articulated set of social and economic policies ensures that this is a variable feature of structure plans. (Jowell and Noble 1981).

At the same time other modifications prior to approval indicate that the Secretary of State is concerned to ease the constraints placed on potential developers by making policies less restrictive: e.g. in approving the Berkshire County Structure plan he ordered that additional land be released to accommodate a further 8,000 dwellings;[15] in approving the Somerset County Structure Plan he instructed that land allocated for housing should be increased to

accommodate a further 4,400 dwellings and the industrial land allocation should initially be increased from 153 hectares to 216 hectares. On representation from the County Council this was further increased to 246 hectares.[16]

Similarly the review of the structure plan, which originally was required to be rolled forward every five years is in future to concern itself with maintaining a valid structure plan - and authorities are to avoid treating the review as a major task calling for large staff resources. In the same vein advice relating to local plans stresses that the need to produce a report of survey should be rare; that serious consideration should be given to preparing one district-wide local plan rather than numerous part-district plans and that informal (non-statutory) plans should not be produced. Whilst there is evidence to suggest that local authorities engaged in serious over-kill in producing early structure plans and local plans, the emphasis of the advice in the proposed revised circular is seen by many in the system to mark "... a further stage in the limitation of any effective role for development plans ... (and) ... takes too restricted a view of the role of development planning."[17] Certainly the restricted content of local and structure plans, allied with the prohibition of non-statutory local plans if adhered to by the planning authorities would ensure that plans produced within the town and country planning system would be simply land use allocation proposals.

Attempts have been made to speed up the development control and plan making process. In plan-making public participation has been reduced to a minimum; the obligation in all cases to hold an EIP or PLI has been removed; and authorities are encouraged if not required to cut survey work to the minimum necessary. On the development control side amendments to the General Development Order have relaxed the limits of permitted development for industrial and residential purposes in certain cases;[18] through the publication of a league table of good and bad development control performers local authorities are encouraged to improve their performance; Circular 22/80 Development Control - Policy and Practice advises local planning authorities "... always to grant planning permission... unless there are sound and clear-cut reasons for refusal;[19] whilst the most recent Circular 14/85 Development and Employment makes it clear that the developoment plan is only one of a number of factors to be considered in determining planning applications and that there should always be a presumption in favour of allowing applications for development. One further erosion of the system seems likely with the introduction of Simplified Planning Zones (SPZ's). These are areas to be defined by local planning authorities where the requirement to obtain planning permission for specific categories of development would be waived.

Conclusions

Since 1947 town and country planning legislation has quite clearly prescribed a narrow land use based role for the planner. No explicit reference is made to the objectives for social and economic change which so motivated the founders of the town planning movement. On the contrary, successive circulars advising on how the system should be operated make it clear that the structure plan is concerned to express social, economic and environmental policies established at the national and regional level in terms of their effect on land use, environmental development and the associated transport system. Local plans are concerned to develop the policy and general proposals of the structure plan; to provide a detailed basis for development control and for co- ordinating the development and other use of land.

The assumption would appear to be that there is a clearly established planning framework through which national objectives and policies for social and economic change are clearly articulated; through which the regional implications of these social and economic objectives and policies can be established to provide a framework for the structure plan, which in turn expresses these social and economic policies in terms of their effect on land use. The structure plan provides the guiding framework for the more detailed local plans needed to guide and control development. If such a

hierarchy of planning levels existed then the role for town and country planning established in legislation would be feasible and proper.

As it is national policies for social and economic change are presented in an ad hoc way, through legislation, regulations, circulars, white papers, green papers and fiscal measures. At the regional level, although attempts were made to give some coherence to the establishment of socio-economic strategies for the English Standard Regions, the results were largely ineffectualand in practice the structure plan operated in a vacuum. this position was formalised in 1979 when the Regional Economic Councils were abolished.

Thus the town and country planner is expected to restrict his concern to the development and other use of land without having clear guidance as to the social and economic change that is being sought by the government. The socio-economic rationale on which the system should be based is uncertain and as a result the planner becomes schizoid. Should he attempt as part of the structure plan to articulate socio-economic policies within which general proposals for the use and development of land can be established? Or should he make assumptions about this socio-economic framework and focus on the narrow land use allocation role? If he pursues the former course of action then any socio-economic policies

set out in the structure plan will be edited out by the Secretary of State, or downgraded to the status of reasoned justification. If he focuses on establishing policies for the use and development of land the very basis of those policies is undermined and the scope of the plan successfully to co-ordinate development is seriously impaired.

Despite these difficulties of operating a land use planning system in a socio-economic policy vacuum in the period between 1947 and 1979 central government quietly but consistently insisted that that was how it should be. The conceptual weaknesses underpinning the system ensured that it could not operate effectively. Since the return of the Conservative Government in 1979 this narrow land use role of town and country planning has been re-affirmed

- through modifications made to structure plans prior to approval; through revisions to the circulars dealing with development plans; through new legislation and regulations. At the same time the changes introduced into the system have begun

- to reduce the powers of the once comprehensive land use planning machinery by establishing ad hoc bodies to deal with particular problem issues or areas in isolation;

- by concentrating important planning decisions in the hands of central government, for example through the use of SDOs; the abolition of the Regional Economic Councils; the establishment of ad hoc bodies such as the Merseyside task force;

- by involving the private sector more centrally in the process, and by allowing a more 'laissez-faire' attitude towards development to be adopted.

Many of the changes introduced are of themselves worthwhile. However to reinforce the land use basis of the town and country planning system without providing a clear framework for the articulation of socio-economic objectives and policies for change will do little to improve things. The uncertainties which have been inherent in the system since 1947 will be reinforced. At the same time the cumulative effect of these changes could reduce the powers of the local planning authorities to little more than a mechanistic process for controlling development, and protecting the nation's heritage; a process which has more in common with the way in which sanitary and land use controls were imposed in the last years of the 19th Century and the early years of the 20th Century, than with the methods of dealing with the inter-related problems of our complex society.

3. Transport Legislation and Urban Development

3.1 Basic Concepts

Following the work of Mitchell Rapkin (1954); Wingo and Perloff (1961) and Buchanan (1963) it was clearly established that there is a close inter-relationship between transport and urban and other development. Indeed Wingo and Perloff state quite categorically that "the choice of a transportation system is the core developmental decision that the Metropolitan Region can make" (1961). In the same paper they go on to argue that the preoccupation with transport as a physical form is misleading; that the transport system should be seen as a set of facilities and institutions organised to distribute the quality of access selectively in an urban area; that the locational behaviour of businesses and individuals are affected by the implementation of transport proposals; and that these induced locational changes affect the performance of the transport system in the long run. Indeed they are of the opinion that "the accumulation of these consequences is in fact the shape and structure of the Metropolitan region in a generation or more hence" (1961). We should be in no doubt that land use decisions affect demand for transport and that transport decisions affect the way in which physical development occurs. The two issues are inseparable. In this respect transport legislation in the UK relating to public transport, traffic management and highway

construction has the greatest interaction with the process of urban development.

3.2 Public Transport Legislation

3.2.1 Road Traffic Act 1930: It is generally argued that the introduction of the 1980 Transport Act radically changed the operating conditions for public transport in the UK. In the period 1930-60 public transport had been controlled by the Road Traffic Act 1930 whereby semi independent tribunals were set up to administer an elaborate system covering vehicles, services and employees. The Act enabled the Traffic Commissioners to regulate conditions in, and entry to, the road passenger transport industry. Before a vehicle could ply for hire three licences were required.

(a) A certificate of fitness for the vehicle in question, and the public service vehicle licence dependent on possessing one. This could be refused on the grounds that the owner was not a fit person to hold a licence.

(b) Personal licences for the driver and conductor. All bus drivers had to pass a special driving test and the licences guaranteed their competence as transport personnel. Conductors were also licensed as a sign of their competence and suitability. The familiar circular badges, (red-rimmed for drivers and green-rimmed for conductors), which display the bearer's licence number, were introduced at the same

time. These licences were non-discriminatory and anyone who qualified could obtain them.

(c) The road service licence was the most crucial of the licences since without it no vehicle could be used for any form of service except private contracts. Moreover it was the Commissioners' means of regulating entry to the industry by discriminating between applicants.

Discretionary powers to grant or refuse road service licences were wide and conditions could be attached. Applications for road service licences were heard at public sittings of the Commissioners to which both supporters and objectors were invited. When considering applications the Commissioners were to take into account:

- the suitability of the route and the extent to which it was already served

- the extent to which the proposed service was necessary or desirable in the public interest

- the needs of the areas to be served as a whole in relation to other traffic

- the prospects for co-ordination of transport facilities within the areas as a whole

If the applicant could not show proof of support for his

proposed service he was unlikely to succeed.

The Commissioners were obliged to attach conditions to road service licences to ensure:

- that fares were reasonable and high enough to prevent wasteful competition with other modes of transport.

- that copies of timetables and faretables were available for public inspection

- that passengers were only picked up and set down at specified places.

Passengers' safety and welfare were also to be taken into account and if desirable the Commissioners could vary the conditions attached to the licences. In practice licences were generally issued for three years; renewal was not automatic and the licences could be revoked or suspended at any time. Appeals could be made to the Minister of Transport, who had the final word in disputes. Local authorities were subject to these licensing arrangements. Although the conditions of issue were embodied in the Act the Commissioners and the Ministry of Transport refused to lay down guidelines on grants or refusals. They argued that since cases varied so widely general principles would lead to unnecessary inflexibility and hence it was better to

treat each case on its merits. The Traffic Commissioners had no precedent to work to and it quickly became apparent that applications were being judged by the principles of priority, protection and public need.

From the outset the Act was interpreted as giving the established operator priority over newcomer applicants and the right to protection from competition. Provided that the operator had performed reasonably before 1930 he was generally allowed to continue. Once licensed, an operator might be protected in several ways from competition.

In the period 1930-60 the provisions of the 1930 Act were periodically amended to take account of specific defects e.g. relaxation of constraints for school transport and car sharing. These amendments were consolidated in the 1960 Transport Act. However, the main thrust of the legislation remained unchanged until the 1980 Transport Act, although in the period 1960-80 there was an increasing emphasis given to local transport planning and extending the range of public transport facilities.

3.2.2 **Public Transport Legislation 1960-80**

Legislation in this period falls into two main categories

(a) legislation concerned either to simplify the system or with local governmnent control (1968-72) and

(b) legislation concerned with public transport experiments (1977-81). Briefly, the former group of legislation included:

Transport Act 1968, which created Passenger Transport Executives in the main Metropolitan areas, and restated local authority powers to run buses.

Transport (London) Act 1969, which transferred London Transport to the Greater London Council and created new provisions for licensing in London.

Local Government Act 1972, which created the post of public transport co-ordinator in the shire counties.

Road Traffic Act 1972, which consolidated the provisions on motoring offences, speed limits, parking places, etc. but left untouched Part 3 of the Road Traffic Act 1960.

Transport Act 1978, which established County Public Transport Plans and required the Traffic Commissioners to take account of these in determining applications for road service licences.

Legislation concerned with public transport experiments includes the

Passenger Vehicles (Experimental Areas) 1977 Act, which empowered the Minister of Transport to designate "trial areas" where road service licences are not required for stage carriage services e.g. RUTEX.

Minibus Act 1977, which established the concept of the community bus, e.g. Norfolk where the bus company provides and maintains a minibus to operate a feeder service from villages without a regular bus service. Under this Act 8-16 seat vehicles used by educational and other bodies are exempted from the need to have a PSV licence.

3.2.3 **Transport Act 1980**

The philosophy underpinning the 1980 Transport Act is similar to that followed by the current Conservative Government in modifying the town planning system i.e. to reduce the level of state involvement or interference in the activities of individuals; to encourage private initiative. The 1980 Act takes the unusual step of explaining in its first section the purposes for which its provisions on Public Service Vehicle licensing are enacted. These include:

(a) redefining and reclassifying public service vehicles;

(b) abolishing road service licenses for express carriage as redefined;

(c) making it easier for applicants to obtain road services licences, and restricting the power to attach thereto conditions as to fares;

(d) providing for the designation of areas as trial areas in which road service licences are not required for stage carriage services;

(e) making new provision for securing the fitness of public service vehicles;

(f) substituting a system of public service vehicle operators' licences for the system of public service vehicle licences; and

(g) providing an appeal against a refusal by the London Transport Executive to enter into an agreement for the provision of a London bus service.

The 1980 Act contains a wide range of provisions which affect the interaction between transport and urban development, the most significant of which are concerned:

(a) to remove as far as possible controls on bus operators which were seen by the Conservative Government as increasing costs and reducing efficiency, and

(b) to improve the level of service offered.

In connection with the former, - bus services over distances of 30 miles no longer require a licence, and hence can be operated by any approved operator;

- stage carriage bus fares can no longer be controlled by the Traffic Commissioners, except in 'exceptional circumstances'. Thus the operators are free to choose whether or not they wish to cross-subsidise unprofitable routes from profit-making routes;

- 'trial areas' can be established at the request of the County Council, wherein road service licences are not required for stage carriage services;

- car-sharing, with passengers contributing to the drivers' costs, is now legalised.

There are a number of implications for the development process arising out of the deregulation of public transport. First, the lack of control of fares and routes by the Traffic Commissioners could hasten the run-down of rural public transport services, which in turn could lead to major changes in the character of rural settlements where only the relatively wealthy car-owning members of the population would wish to live. Small towns and particularly villages could well become one-class dormitory settlements whilst the poorer and disadvantaged sections of the community might eventually concentrate in the large towns and cities where

there would more than likely be better access to transport and other facilities. Second, within urban areas there is every likelihood that unprofitable routes or services will be abandoned leaving sectors of the town or city or the community disadvantaged. Thus some locations will be favoured with good accessibility whilst others will not and changes in the location of activities to adjust to the changes in accessibility will inevitably occur. In the words of Wingo and Perloff "the accumulation of these consequences is in fact the shape and structure of the Metropolitan region in a generation or more hence" (1961). This situation is compounded by the decision to abolish the Metropolitan County authorities in the UK in 1986 and to hand over their responsibilities to the District Councils in those areas or to appointed 'quangos'. As a result there will be no one authority with overall responsibility for strategic development issues; the integration of planning for major highways, public transport, traffic and freight will be abandoned in favour of ad hoc decisions by individual agencies. This will compartmentalise resource allocation in the transport sector and create a further obstacle to functional co-ordination, e.g. of traffic management and bus operations.

Traffic Management

The Local Government Act 1972 gives the County Councils prime responsibility for the discharge of traffic management

functions, including road safety and the making of traffic regulation orders. In the area of transportation planning this has become increasingly important because of its low cost. The objective of traffic management is to maximise the use or capacity of the existing road system by organising its use in a different and more efficient way, rather than construct new roads. At the same time improvements in driver and pedestrian safety are sought. Measures widely adopted include

- the introduction of one-way traffic flows, the prohibition of left or right turning movements and the restriction of parking to improve the speed and safety of traffic flow;
- pedestrianisation of streets to improve the environmental quality of key areas in towns and cities;
- the provision of bus-only or cycle-only lanes to improve the reliability of public transport services and the safety conditions for cyclists.

Such measures are in widespread use throughout the UK and in many other countries in the World. They are often opposed in the locality where they are to be introduced but in general terms are politicsally acceptable to the majority. They also have applicability in a wide variety of conditions and circumstances.

Conclusions

The implications of this paper are that British experience in the field of transport and urban development has something to offer Malaysia. That may well be the case - we have a wealth of practical experience in these areas. But what is transferrable to Malaysia is for you to judge. What is appropriate in the UK may not be appropriate in Malaysia - your culture, your politics, your economic growth rate and your prospects for the future are very different to ours. All thesefactors - referred to in the jargo as **contingent factors** will or should influence what solution to transport and development issues in Malaysia is appropriate.
There are however a number of general lessons which can be learned from the UK experience.

First the development planning process in the UK is explicitly concerned with the production of plans and the negative control of development. However the reality of having toadjust to a declining economy is showing us that town planning should be concerned with the management of change in the environment. This is probably the most important lesson that can be learned from our experience - **town planning is concerned to manage change in the environment by applying the basic managerial processes exercised by all managers in all types of organisation.**

Second, there is a close inter-relationship between the provision of transport facilities and the location of development. The level of accessibility will influence the location of activities. In the words of Wingo and Perloff **"the choice of a transportation system is the core developmental decision that a Metropolitan region can make". (1961)**

Third, the adoption of a system mof managing change in the environment which fragments responsibility for different aspects between different agencies will inevitably result in the adoption of policies and proposals which are often mutually in conflict.

Fourth, the process of urban development and the provision of transport is entirely political. The decision to introduce or withdraw a particular transport facility selectively discriminates for one area or group of people and against another; the decision to approve or reject a development proposal is similarly discriminatory. The whole process is concerned with the allocation of limited resources.

NOTES AND REFERENCES

NOTES

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PROVISION OF URBAN PASSENGER TRANSPORT - OPERATOR'S POINT OF VIEW

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Introduction

The provision of a good urban public passenger transport service is essential to the mobility of the people and thereby enhances the quality of life. Invariably the operation of urban public transport is governed by the traffic demand trend. Our experience from operator's point of view tell us that the factors/element below must be taken into account in order to provide an effective and efficient public transport for the urban community.

Population and Land Use

In the first place, relatively high density of population make it possible to provide efficient or good quality services.

The existing of good facilities eg. bus stops with shelters, terminal and interchanges etc. will help us provide, regulate and operate a commendable service for the benefit of the population.

Land use in each zone will also help influence and develop the trend of the traffic whether it is for social or for necessity etc.

In our case, however, we are in a difficult situation whereby facilities provided do not actually favour our operation. In Kuala Lumpur we will find terminals right in the Central Business District (CBD). These terminals are common terminals i.e. all operators of different modes will use the available faiclities. The problem is the maintenance and housekeeping of such terminals is at stake. Shopping malls and complexes/ plazas were built to cater for high income group.

Bus operators are forgotten parties as far as the builders are concerned. They failed to provide certain aspect of their premises for the potential client to disembark and board the various buses.

..2/-

In Kuala Lumpur only one centre (Kota Raya) actually provide bus stop for their potential clients. However that has been misused by cabbies and affluent shoppers who parked their cars.

Peak and Off Peak

The demand for public transport is heavy during the peak period. In other words it is heavily peaked at times of journeys to and from work.

The problem here is low utilisation of assets.

This problem of peak is getting worse in Kuala Lumpur. It is not wrong to say that K.L is fast becoming an exclusively white collar centre with common work hours, high leisure on weekends etc. Growing use of car for off peak journeys where constraints are, should I say less severe, will strengten the peak problem.

Low Mean Trip Length

For information we are operating low mean trip length as far as our operation in the capital is concerned. However, as far as our Klang Valley operation is concerned comparatively our mean trip length is still low.

Our fare structure for the stage services will put a good index for such claim with regard to journey fare to the Central Business District (CBD).

The Problems for Operations During the Peak and Off Peak Period

In most countries (namely Hong Kong, Japan etc.) there is seldom any justification for urban public transport fares to be at a constant rate per mile regardless of the trip length.

Heavy costs incurred due to peak like short trips, longer journey times due to road congestion hardly justifies the claim.

...3/-

Our experience in K.L is different. We have to follow constant fare per Km i.e. $0.05 per Km without due consideration on the extra terrestrial cost incurred when operating during the peak period. Low utilisation during off peak period i.e assets and staff are under utilised during the said period.

The question now is where to strike the balance for operating during the peak and off peak. The operator has to exploit the peak period so as to subsidise the off peak bus but however, most of the time peak services could not operate at break even level due to extra costs incurred (that has been mentioned).

Our experience/statistics shows that at least 60% of trip lost was due to road congestion every day other that other factors.

Economics of Operations

Basically a company would like to know what would the cost to operate the services be.

The traditional approach of calculating an average costs per bus failed to reflect the effects of variation in vehicles size, vehicle and crew utilisation between services.

Our experience tell us that the system of allocating the costs into 3 variable is very practical.

The approach is on following matrix

	Bus Day	Mileage	Peak Vehicle
Variable	Crew	Fuel, Oil, Tyre	-
Semi Variable	Maintenance	-	Vehicle Depreciation
Fixed	-	-	Garage, Overhead

..4/-

We identify peak vehicle requirement. Our experience tell us that if bus No. 1 with full capacity load of 35 reached her destination in 50 minutes, bus No. 2 with a full capacity load of 105 also reached her destination from the same origin in approximately the same time during the peak period.

We deployed all our vehicular units during the peak period.

Logically, the size of peak vehicle requirements will determine our fleet size and other support requirements.

Our experience further exposed certain finding that is deployment of one man operation mini bus services is the answer to the constant growth of urban public transport i.e. peak and off peak.

What I want to highlight here is that the one man operation bus services is the best way to offsett/approach the increasing crew cost and it is the best method to operate during the off peak period. Scheduling of the services will fall into 2 categories:

1. Split shift services
2. 2 straight shift.

Our operations further approach the problem of peak and off peak by scheduling our services into 2 categories of services as above.

This however defend very much on the demand for the services. Economics situation etc. played a prominent role to determine the characteristic and economics of the Operations.

To those would be entrepreneur of urban passenger transport, I strongly advise the approach of split shift crew for every bus and let one man operation be the order of urban passenger transport.

The Constraints

As I have already mentioned the operation of urban passenger transport especially in Klang Valley is a challenge to every body.

..5/-

We in S.J experience constraints that can dampened the services of many operator but thankfully not S.J.

It is not wrong for us to say that what ever facilities laid by the various authorities do not favour the urban passenger transport operators and at the same time the public, layman, academician will not tolerate slackening services yet when we introduce new system and new method to our urban passenger transport for better services very few will response.

Ideas like providing bus lanes, restraints on parking facilities, area traffic management scheme are but obsolete. There should be enforced and implemented at least 5 years ago.

Space constraints on our part also is a growing concern in our circle with regard to providing of proper terminals for all levels of the passenger.

Other constraints include the various authorities, red tapes and financial aspects. It is very difficult for us actually to provide an excellent service unless the various parties involved co-operate and gave us the due recognition to provide the vital services for everybody in the urban areas.

The Future

In the light of Kuala Lumpur developing into a pre 'Star Wars' type of urban centre what is the future of the urban passenger transport especially bus services.

The LRT which is Light Rail Transit (instead of Light Rapid Transit) is not the answer to the ever growing problem of peak and off peak period.

The investment on the infrastructure is quite substantial but what about recovering of the expenditure. The question is the frequency provided by the service. It is an accepted fact that the mode has the right of way (no competition from other mode).

..6/-

Experience shows that such risk should not be considered bearing the seasonal aspect and the preference of commuters for door-to-door service.

Likewise the Aerobus system might experience the same. Please note that the commuters of K.L will prefer a service that can bring them right to their office premise.

Conclusion

I would like to emphasise here that to provide an efficient, good quality passenger transport all parties should be it the operators or the government agencies, strive for new approach.

There should be element of positive attitude towards any change in the methods of operation.

One man operated buses should be the answer to the present transport woes. The present situation in K.L metropolitan of multiple operators of bus services should be stopped.

Permits should be given to operators who are interested to provide urban passenger transport service only, not to those who want to make their millions at the expense of the service (this is quite rampant with small operators).

Approach should be professional, thus a good network for transport to cater for the demand is derived.

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Date: 12th. Nov. 1985

URBAN PUBLIC TRANSPORT IN PENINSULAR MALAYSIA : SOME POLICY CONSIDERATION

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Introduction

Process of urbanization together with the increase in population has caused the expansion of many existing urban areas. This suggests that the mobility rate will be exceptionally higher in large or principal towns compared to the smaller ones.

Several attempta have been made to draw up plans for urban transport in many of Malaysian towns. However, the existing public transport phenomena which encourage private car ownership has led to a declining modal split ratio for public transport.

The decline in the use of public transport are partly due to the fact that public transport is regarded as a socially

degraded mode of transport. It is quite true as the conditions and service of public transport have been deteriorating despite some incentives and fragmented attempts have introduced by regulatory bodies.

The absence of a sole and responsible body for the planning of public transport was found to be another issue which contributed towards the present state of deficiency.

This paper attempts to review some urban Public transport issues (related to planning, licencing integration and urban development) in the hope to generate appropriate policies at the strategic and local levels.

Urban Travel Characteristics

Travel by private transport was and will continue to be a popular means of movement in Malaysian towns. In Kuala Lumpur, for instance, travel by private transport was found to be proportionately high compared with travel by public transport.

The figure was even higher in 1980 when compared to 1975. In 1980, 70.8% of the total passengers in Kuala Lumpur used private transport which formed 85.9% of the total vehicular movement. During the same period only 29.2% of the passengers travelled by total public transport which accounted for only 2% of the vehicular movement. [1]

A general decline in the use of public transport particularly buses in Penang and Kuantan could also be seen from the Table 1, which shows like percentage of passengers using the different modes of transport.

The switch from public to private transport (Figure 1 and Table 2) by the public can be attributed to the improving socio-economic position of the people. However, this does not absolve the poor quality of the public transport system from its responsibility in causing the switch. High car

ownership ratios in Malaysian cities and towns (Table 3) are an indication.

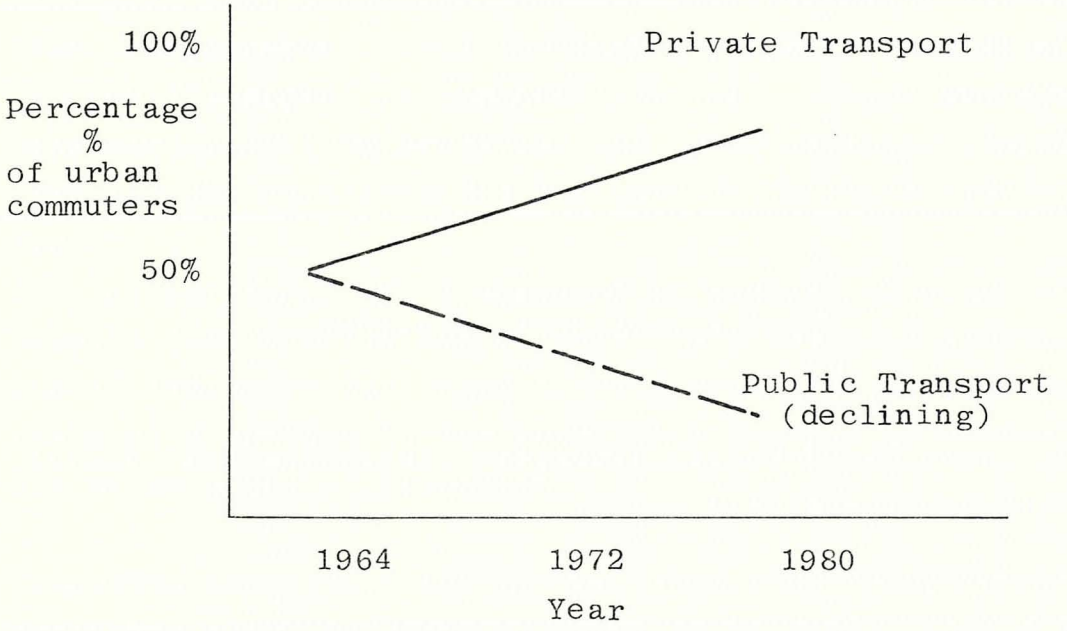

Figure 1: Changes in Travel Mode in Terms of Percentage for Kuala Lumpur 1964-1980

	Penang 1980	Kuantan 1983
Private transport (Car)	34.5	32
Motorcycle	58.1	26
Bus (including factory & school buses)	2.8	22
Bicycle	0.4	8
Others	4.2	12
	100.0	100.0

Table 1 : The Percentage of Passengers Travelled by Mode of Transport in Georgetown - Kuantan

(From : JICA 1980, Penang Transport Study, Draft Final Report Main Volume, Page 16, and Majlis Perbandaran Kuantan 1983)

Cities	1964	1970	1979	1980	1982
Kuala Limpur	**46% (*48%)	-	-	**25%(20%	-
Georgetown	-	**38%	-	**22%	-
Kuantan	-	-	**52%	-	**37%

Table 2 : Number of Passengers (%) Travelled by Public Transport 1964-1982)

(From various sources)

* All road based Public Transport (including mini buses)

** Standard Buses Only

	Bangkok	Jakarta	Singapore	K.L.	Georgetown
No. of cars Per every 1,000 people	60	34	74	85	125

Table 3 : Vehicle Ownership in K.L. - Georgetown and other S.E.A. cities

(From: Various sources)

Percentage of public transport passenger (Table 2) figures when compared with similar ones of ASEAN cities (Jakarta 52% - 1977, Manila 75% - 1977, Bangkok 62% - 1977) showed that Malaysia's public transport system in cities such as Kuala Lumpur and Georgetown are difinetely less attrative. This trend of the increasing use of private transport for urban travel supports the assertion of the declining modal split ratio for public transport in Malaysia.

On reason given for travelling by bus, 60% of those passengers interviewed in Georgetown[2] and 81% in Kuantan,[3] said that they travelled by bus out of necessity rather than convenience. Their standard answers, ranged from - 'no own transport' to 'no other choice'. Those who owned transport said they preferred the bus because of its cheap fare and the fact they did not wish to drive in traffic jams.

Despite its relative unpopularity as a means of travel, public transport was found to have fulfilled the basic needs of a section of the population who had no access to any other means of transport.

Comparing the proportion of the urban poor using buses in our towns with the poverty level in Malaysia, (Table 4) the situation suggests a high percentage of the bus commuters were much below the poverty level. Thus the analysis not only indicates the importance of buses but the urgency to intervene and improve public transport.

The rapid growth of urban population with annual increases at the rate of 4.1%. 2.5%, 5.2% for Kuala Lumpur, Georgetown, Kuantan respectively was found to be either equivalent or above that of the national average of 2.6% per annum. It was also an indicator of possible changing travel pattern.

The growth of the urban population in the future will exceed the growth of the rural population. More and more people will live in cities and towns such on Kuala Lumpur, Georgetown, Seremban, Johore Bahru etc. These growing cities certainly need an effective transport system to achieve economic development and sosial balance. The rise in income level and the general decline in the poverty level would also support the argument that the trend of private vehicle ownership would continue to rise. In turn, this will discourage the use of public transport especially in the present state of affairs, unless the public transport system is improved.

	% of the poverty level i.e. below M$300/- per month per household 1980/83
Kuantan :	
(1) Bus commuters	74.6%
(2) Overall population	25.2%
Georgetown :	
(1) Bus commuters	70.4%
(2) Overall population	23.2%
Kuala Lumpur :	
(1) Bus commuters	Not Available
(2) Overall population	21%
Overall Urban Areas (over 10,000 pop.) in West Malaysia	-
West Malaysia	29.3%

Table 4 : Comparison of Public Transport Commuters in the 3 Cities With Malaysian Situation In Terms of Poverty Level.

(From : Various sources)

However, the analysis shown in Table 5, Figure 2 revealed that buses continued to be on important mode of transport. This can be seen from the large slice of public transport passengers which they carry.

Type of Public Transport	Kuala Lumpur 1980	Georgetown 1980	Kuantan 1983	Malacca 1985
Single decker bus standard)	45%	78%	82%	94%
Mini Buses	30%	-	-	-
Taxi)	25%	10%)	18%	16%
Others)		12%)		

Table 5 : Proportion (%) of Public Transport Commuters Travelling by bus in Kuala Lumpur, Georgetown, Kuantan and Malacca.

(From : Various sources)

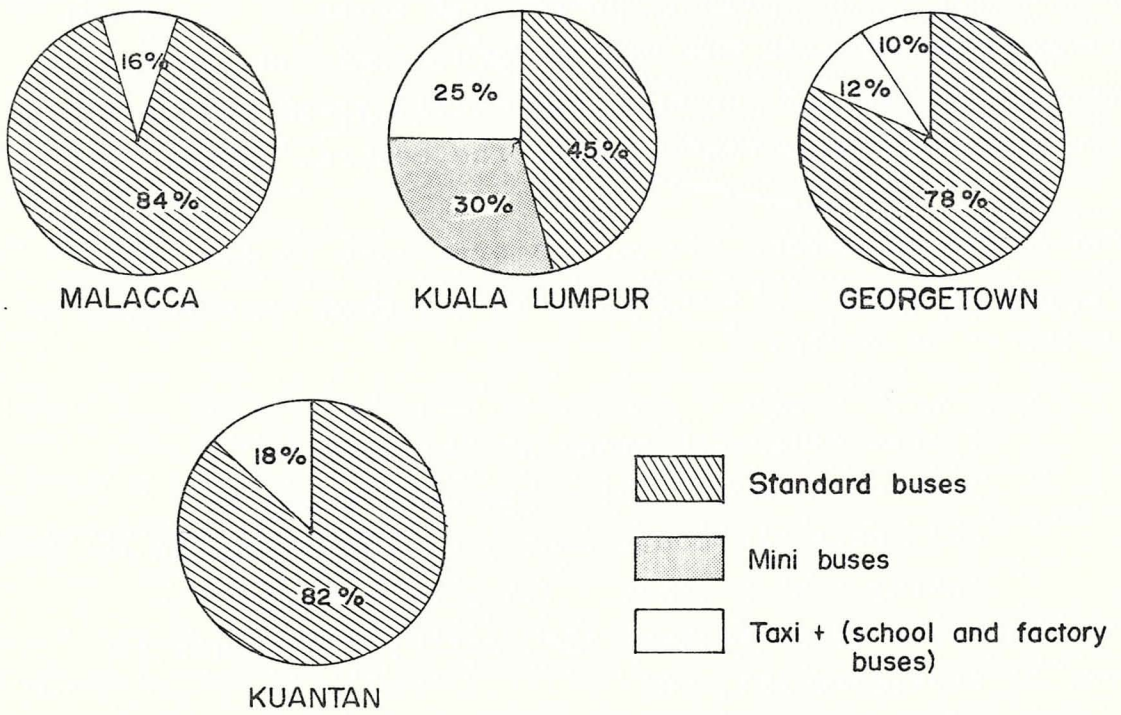

Figure 2 : Proportion (%) of Public Transport Commuters Travelled by bus in Kuala Lumpur, Georgetown and Malacca.

(From : Various sources)

The above findings also indicate to us that buses have the potential to be an efficient public transport if the necessary improvements are made.

Nevertheless there will be a growing demand for trips which cannot be made by walking or private transport. The growth of car ownership which was found to be higher in large cities or urban areas, suggests that movement by private transport and problems associated with it would continue to be a dominating issue in urban areas.

The physical patterns of most existing Malaysian towns are found te be largely characterised by one major Central Business District (C.B.D.) Despite new plans to have urban centres decentralised, the concentration of jobs, shopping and other activities will continue to attract more journey or trips towards the central areas of the towns These together with the continued economic and physical development in and around the Central areas or C.B.D. would attract more traffic into the central areas.

The degree of demand for public transport to work etc. depends on several factors including urban expansion. As indicated by Bruton.[4]

> 'Urban expansion means an increase in journey length which has been found to influence the modal choice of those persons making that journey. The more extended the ueban areas become, the further the community distances will be.'

Figure 3 indicates urban expansion related to population density and distance.

Other factors were also contributing towards longer time used when travelling by bus. In Kuala Lumpur for instance, the high traffic volume and congestion in the city centre, as well as along the main roads, were found to be the main

factor contributing to this problem. In Georgetown, the problem was due to among other thing, the existence of informal activities along the main roads and the variable road width. In Kuantan, shortage of buses and high access time were among the main reasons responsible for increasing bus travel time. I believe that problems of this nature, do exist in varying scale in other Malaysian towns.

The problems with urban public transport as pointed out earlier will continue unless a proper orginisation for its planning is introduced.

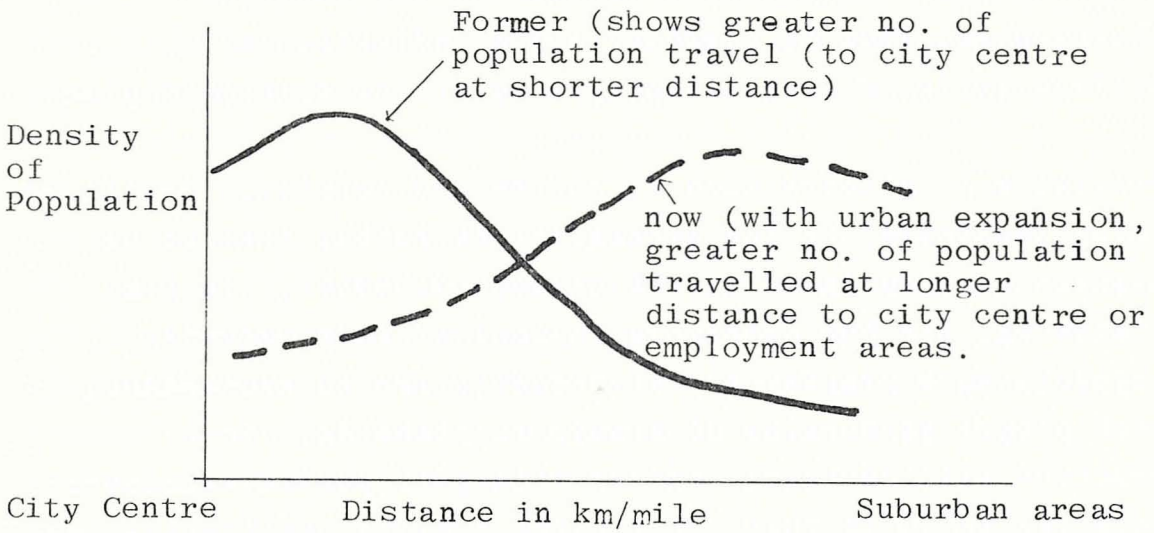

Figure 3 : Density of population and distance from city centre.

Planning and Licencing

There are many agencies at Central level involved in public transport. The involvement of too many authorities with unclear scope and functions is another source of the problems. The regulatory bodies including local authorities can produce plans but without an agreement or clearer definition of their respective jurisdiction the plans are likely to be a failure.

However, the only two (2) agencies empowered by the Road Transport Ordinance (RTO) 1958, to be involved in public

transport matters, are the Road Transport Licencing Board (RTLB), Ministry of Public Enterprises and Road Transport Department (RTD) Ministry of Transport.

The formation of the RTLB and RTD are merely limited to providing services such as issuing licences and inspections of motor vehicles.

It must also be stressed that the RTO (1958) is rather outdated and is on obstacle for efforts to effectively control licencing urban public transport system. The split of control the licensing activities between RTLB and RTD with poor or lack of criteria for the issue of licences and lack of planning are a reflection of difficulty in setting an integrated public transport plan.

Provision of network such as routes and terminals continued to be influenced by the market forces rather than being planned and regulated by the connected bodies. In many instances, the bus operators themselves independently initiate such provisions which rarely are in accordance with proper principles of transport planning. Such practice will certainly end up with poor public transport networks which in turn contributes towards unattractiveness of public transport.

Incidentally, one has not noticed any significant expansion of the private owned undertakings. The great shift from government to private undertakings in Georgetown and the rise in the numbers of private undertakings in other Malaysian towns, reflects not only the importance of private organisations as a source of public transport also how much the government relies on the private sector in providing public services.

The over dependence on private sectors to provide services to the public has made privately owned urban public transport a dominant feature in Malaysian towns and cities. Private

involvement or commitment in urban public transport has been boosted especially through the privatisation concept launched by the government in 1984.

One major difficulty in realising an efficient and reliable bus operation was traced to the emergence of widespread un co-ordinated bus undertakings. The over-lapping of routes in some part of urban areas, competition for services, unnecessary trip reductions were some of the results of little intervention or lack of coordination at the central and local levels with respect to the operation of urban public transport.

This together with the lack of powers and guidelines to plan public transport are the major reason for the un-attractiveness of public transport.

Little concern for public transport which subsequently led to its inefficiency and the declining modal split ratio for public transport was found to be associated with the lack of professionally qualified staff. Shortage of qualified transport professional has been more serious at the central levels particularly RTLB and RTD.

If better information systems (such as leaflets on time-table, route and destination, information (on and in buses, at bus stops and stations) scheduling and fare) were organised, some problems associated with public transport travel would not be as bad as it is now.

However, to improve the public transport system, solely through a marketing strategy is not possible. This is in view of the presence of several bus undertakings (each with polarised business strategy) and the absence of a single public transport authority, or a statutory requirement to plan and control public transport and no guidelines for public transport planning and licencing.

Some Policy Considerations

The authority through the regulatory bodies, appears to lack powers to plan and implement public transport policy. Other issues contributing towards the present state of deficiency are:

- Inadequate planning resources (staff)
- Lack of local involvement in public transport planning

Whether the functions of the existing authority are clearly defined, the operators on the other hand, have to operate public transport. The broad policy measures encompassing organisation, planning, licencing and urban development aiming to improve public transport are:

(a) Greater involvement in planning and control by central agencies:

  i. Formation of Public Transport Planning Unit (PTPU)
  ii. Preparation of Guidelines for Public Transport Planning.

(b) Greater involvement in planning and control by local authorities.

(c) Integration of public transport with urban development.

a. Greater Involvement in Planning and Control by Central Agencies.

The success of whatever policies depends very much on the central agency which should be reorganised taking account of planning, licencing coordination. The existing vague outline of its authority as well as the absence of any guidelines on the overall planning and licencing of public transport as indicated earlier, justifies a recommendation to reorganise the central agencies :

i. Formation of Public Transport Planning Unit (PTPU)

A Public Transport Plannning Unit (PTPU) should be instituted. A streamlining of the existing agencies or by upgrading the present RTLB into a PTPU is one of the ways to enable greater control besides avoiding some works duplication (between RTD and RTLB) and expediating the process of approval as well as providing clearer and better framework for public transport planning and control.

The Public Transport Planning Unit (PTPU) is to be supported with three sub-units namely:

1. Research
2. Planning
3. Quantitative licencing (formerly RTLB under the Ministry of Public Enterprises)

The broad functions of the proposed Public Transport policy Unit (PTPU) among other would be:

1. Review any urban transport studies at national level.

2. Undertake appropriate public transport studies at national level.

3. Determine the approach and form of urban development appropriate to public transport.

4. Determine/provide guidelines for public transport planning in relation to physical and socio-economic issues for implementation at local levels.

5. Identify the needs and examine the supply of public transport at national level.

6. Issue quantitative licences and permits to bus, taxi and lorry operators and at the same time determine the routes, stops and other guidelines for local authorities in planning and control of the public transport system.

ii. Preparation of the Guidelines

The analysis indicating little local involvement and the lack of guidelines for the planning and coordinated efforts which have inevitably given rise to the unattractiveness of public transport, supports the suggestion of the need to prepare public transport guidelines.

This guideline or document to be prepared by the proposed Public Transport Policy Unit (PTPU) contains an outline of issues and strategies on public transport.

It is to be circulated to the central and local government officials as a guide to plan detailed urban public transport system.

However, the RTO (1958) has to be improved so that more attention is given to the planning and control for public transport at the central and local levels.

b. Greater Involvement in Planning and Control by Local Authorities

With the exception of Kuala Lumpur, none of the local authorities in Malaysia has functions to undertake the planning of transport for their respective areas. Though the Transport Department exists in Penang Island Municipality (Georgetown), this is merely

concerned with the operation of the Municipal council buses. The present organisational structure actually widens the gaps of planning and implementation between central and local agencies.

Problems generated by uncoordinated multiple bus undertakings and other issues such as poor planning with respect to routes, terminals and the public transport networks, in the residential and employment areas the result of lack of local involvement was found responsible for the present unattractiveness of public transport. The absence of an urban transport division or department at the local level has also contributed towards poor public transport planning which increased the declining modal split ratio against public transport.

What is really needed is a division entrusted with the functions of urban transport (including public transport)

Among the functions entrusted to be undertaken would be:-

1. To review local public transport issues.

2. To study local transport infrastructure including stops and terminals.

3. To estimate the needs/demands for, as well as the supply of transport, based on the marketing strategy.

4. Planning for bus routes, stops, fares, frequency etc., in the light of physical development at local levels and in the context of the framework provided by PTPU.

5. Integrated road public transport with other transit systems in local areas and in the context of the framework provided by PTPU.

6. Coordinate the works of traffic management and planning related to public transport.

7. Promote the usage of public transport.

8. To integrate the public transport and urban development planning at the strategic level.

9. To work closely (liaise) with the proposed PTPU, and local RTD's.

c. Integration of Public Transport with Urban Development

With regard to urban development three categories of areas need to be considered is attempting to integrate them with public transport.

1. Existing Built Up Areas
2. Central Areas
3. New Peripherial Areas

i. Existing Built Up Areas

In line with the concept of decentralization, urban activities and traffic are to be taken away from an existing town centre. For this reason, examination of the existing public transport networks, with bus in particular is necessary in order to simplify the route network. Appropriate bus priority in the form of bus lane on radial roads to overcome the problems of congestion and to increase speed of travel is also recommended.[5]

ii. Central Areas

A number of policies and techniques in the form of

bus priority may be introduced in the CBD. These may include bus lanes and bus only streets. Some restriction scheme and assosiated traffic management designed mainly to restrict the entry of private vehicle into the CBD during peak hours are necessary.

iii. New Perpherial Areas

Incremental perpherial urban growth usually difficult to provide efficient public transport route. Alternatively, planned perpherial growth-linear form and spinal bus services with maximum walking distance would be more suitable form in integrating public transport with urban development (Figure 1.4)

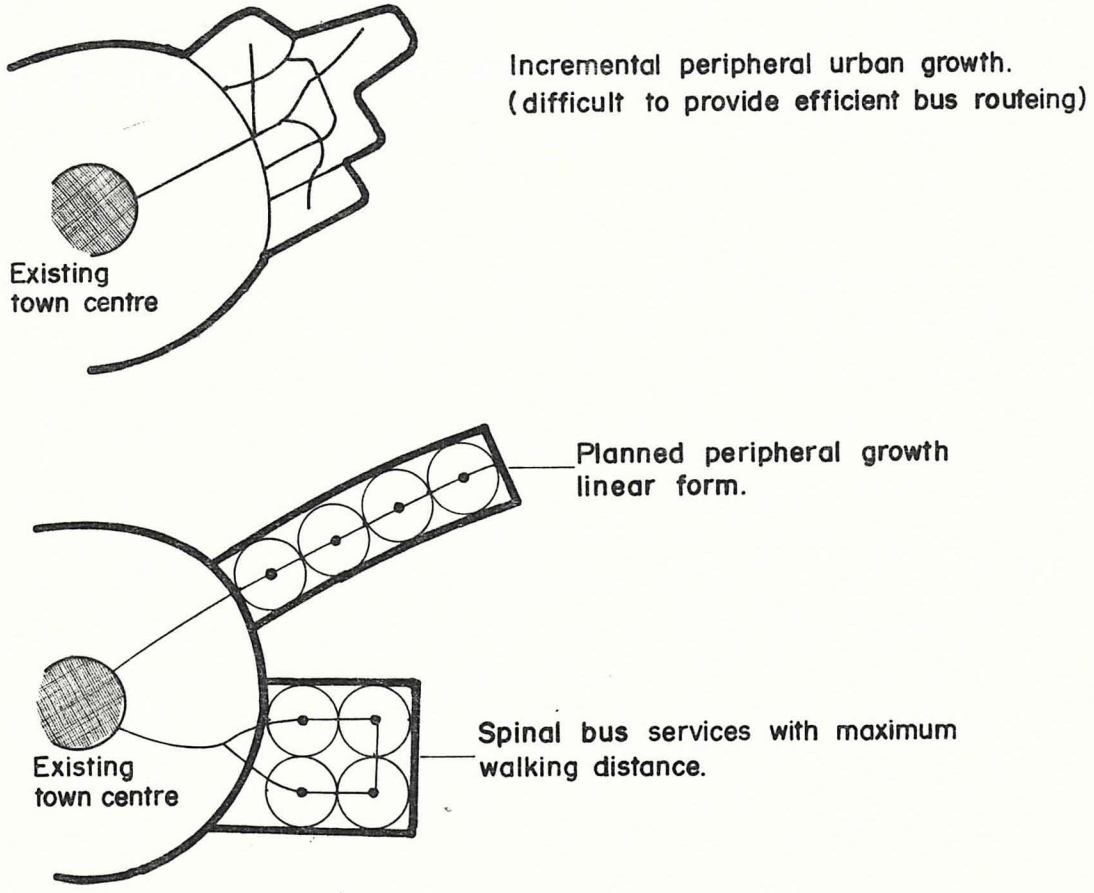

Figure 1.4: Example of Urban Growth in Relation to Public Transport

Concluding Remarks

Public transport in Malaysia must be coordinated. This could be brought through a number of ways:

- Reorganise and streamline public transport at atrategic level.

- Provide guidelines and improve statutory requirements for the planning of public transport.

- Encourage local authorities in the planning and control of public transport.

- Increase the number of transport personnel through vigorous trainning.

- Integration of public transport with urban development.

- Improved marketing system for public transport.

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TRANSPORT PROVISION AND POLICY

By

HATIJAH HASHIM AND EDMUND GNANAMUTHU

CONSUMERS' ASSOCIATION OF PENANG

I INTRODUCTION

As we motor into the second half of this decade, the Government would have spent millions of dollars on transportation. Indeed, by the end of the Fourth Malaysia Plan, $9.4 billion would have been spent.

The result of this expenditure is a paradox. Transportation has worsened, instead of improving. In our cities, where much of the funds were channelled, traffic snarls are as intractable as ever. Thousands are being killed and being maimed on the road. Individual cost of travel is prohibitive; costing a car owner for example $13 to travel mostly to office.[1] There is psychological distress, discomfort and pollution to be borne with during travel.

Meanwhile, those who opt for public transport face unpredictable delays and uncertainties in bus schedules. Bus fares are not according to Government rates but are several times higher. There has also been enormous social price paid for by transportation as houses have been pulled down and land made scarce.

These are some of the unending problems faced by consumers. Thus, has the 9.4 billion dollars provision of the Government improved transport or has it advanced the rot? This paper discusses why and how the present transport system has worsened conditions. It discusses at length the demerits of the present priority given to road transportation and gives some suggestions to remedy it.

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II TRANSPORT PROVISION AND POLICY

Under the First Malaysia Plan, road transportation received the highest priority. Since then, it has been the forerunner in all Government provisions consuming $6 billion of the $9.4 billion allocations. Under the Second Malaysia Plan, 72 per cent of the allocations went to road transport in comparison to railways which received only 2.8 per cent of the allocations during the same period.

Under the Fourth Malaysia Plan, more than half of it went to road transportation. Railways received only 7.3 per cent of the allocations.

Much of these allocations were to accomodate the growing vehicular population. 'The rapid increase' says the mid-review of the Fourth Malaysia Plan, 'in registered motor vehicles exerted considerable demand on the need to expand road facilities.' Thus encouragement in vehicular growth has been the catalyst in the priority given to road transportation.

With an average annual growth rate of 11.2 per cent in vehicular traffic, Tan Sri Chong Hon Nyan, the Transport Minister said in a National Transport Workshop in March 1984, 'We keep on building more and better roads at greater cost'.[2]

Thus, when roads are expanded, the problems are not solved. As a lecturer pointed out in a paper on 'The Transport Subsidy/Grants Policy' that in urban road building, 'the net result is the generation of additional traffic flow and the creation of new areas of congestion with consequent demands for further road improvements or new road constructions, the cost of which are continuously escalating.'[3]

In addition, increase in traffic flow will reduce quality and efficiency of public transport facilities. Thus, because of this 'self generation' effect, urban highways and road building is not the solution.

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Nevertheless, with the high priority given to road building, most other forms of transportation have suffered. Our railway system struggles to remain in existence. The Government provides only 2 to 7 per cent of its allocation on railways. The scant attention given by the Government's transport provision is due to the view of policy makers that this mode of transport brings deficit to the nation's transport balance sheet. This view is however highly debatable. Indeed, it can be shown that railways can be more profitable than road building.

The other forms of transportation have been however left to find their own dwindling death. Inland waterways, which historically this country owes its prosperity is disappearing into oblivion. These rivers which were once the mainstream of activity is dying of siltation and pollution.

Also, pedestrians and cyclists have also fallen out of the Government's attention. These forms may be the simplest, the cheapest and perhaps the best form of transport but it is the second most ignored form of transport in the country. In fact, the Government has severed it and discouraged its development.

Again, while the Government provides for sea transportation, it is largely confined to international trade and shipping. Thus, despite the long coastline and the excellent stopping spots along them, the Government has not exploited them. Meanwhile, air transportation continues to receive much emphasis even though they only cater for a minority few.

1. Poor Planning

Most of the steps taken by the Government to improve transportation are not based on any good and wholesome rationality. Their actions are sporadic and not planned.

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Demand for transport has almost always meant the building of more roads. The two have become synonymous. Never is this demand first reduced in order to make the need for facilities necessary. In other words, transport demand should not be created and every effort must be made to reduce it. Such quality of planning appears to be lacking.

The development of Petaling Jaya as a new satellite city of Kuala Lumpur (KL) demonstrates how the planning of it can escalate the transport demands many folds rather than solve it. PJ was to become an industrial estate and a significant labour force from the squatter colonies in KL were expected to be attracted to the area. Logically, therefore, low-cost housing estates should be developed in PJ for settlement of the workers and thereby reduce the heavy pressure on transportation. However, PJ was quickly turned into a dormitory town catering for the middle and upper classes working in KL. The good housing in PJ thus matched the high pay jobs in KL while the factory jobs in PJ were filled by low-income workers from KL. The result has been an interchange or cross-hauling of commuters that has created massive traffic jams on the main highway connecting the two cities, and incurred much unnecessary waste of energy. A survey in 1973 has found that only 48 per cent of the PJ residents were employed in PJ itself; another 48 per cent worked in KL and the remaining 4 per cent elsewhere (Soo Ai Lee, 1981). Although this is an improvement over the situation found in an earlier survey in 1963 (where the distribution was 32 per cent, 61 per cent and 7 per cent respectively (McGee & Metaggort, 1967), it still indicates a significant level of work-based commuting. Conversely, over 42 per cent of PJ's industrial establishment workers came from outside PJ in the early 1960's (Chi, 1967) and the situation has not changed much by the late 1970's.[4]

While much has been said about the present provision, little needs to be said about the policy on transport since there has been none so far. Suffice to say, its absence only enhances the poor quality of transportation in the country.

Thus, the present Government's transport provisions contribute towards greater imbalances and disintegration of other forms of transport necessary for the country.

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III SOME MAJOR PROBLEMS CAUSED BY ROAD TRANSPORT

1. Road Accidents

With increasing vehicular traffic, there has been a corresponding increase in deaths and injuries. In fact, no other form of transport kills as many lives as a private based transport system.

On an average, 6 people die, 56 are injured, 173 people admitted to hospitals and 300 vehicles get damaged in road accidents every day.[5]

The rate of road accidents has increased nearly four folds since 1957.[6] From 1973 to 1983, a total of 504,757 accidents occurred involving 24,671 deaths.[7]

Says the Vice Chairman of the British Road Federation, Mr. A.C. Durie in 1968:[8]

> 'I am convinced that death and injury on the road will become one of the greatest burdens of our society ... Hardly a single household in the land will escape the long hand of human destruction, either by removing loved ones from the home or condemning them to live only half a life permanently shattered.'

Indeed, the accident rates in Malaysia is among the worst in the world. It is a disgrace to our society, appalling beyond words.

Tan Sri Chong Hon Nyan , the Transport Minister said, 'Because of the consequent increase in road accidents, there is pressure ... on our medical services and hospitals that they have to cope with an increasing number of road casualties'.[9]

However, more than the loss of money, it is an irrecoverable loss of human lives. No form of transport can be said to be profitable if it causes extensive grief to society. Nevertheless, even if it was computed on monetary terms, it will cost the nation a loss of $431 million.[10]

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In comparison, the Malayan Railway incurs an annual deficit of a mere $3 to $4 million. How then can it be said that road transportation is profitable? Is the priority justifiable? Not even war or natural disasters claim such casualties as road accidents do.

On this count alone, there is such extensive damage done by road transport system developed to accomodate cars. Let us see the others caused by road transportation.

2. Loss Of Land

Lester Brown* said:

> 'All transport systems require land but some require much more than others. Automobile-centred transport systems are voracious consumers of land. Societies moving towards an automobile centred transportation system should weigh carefully the sacrifice of cropland that is sure to be involved. Almost any other form of transportation requires less land. Societies with well-developed public transport systems are able to use land far more efficiently than those where most people rely on cars.'[11]

In Balik Pulau, Penang for example, farmers have to surrender under protest huge pieces of land where some of the best fruit trees stood for development into roads. This construction also led to several acres of land being destroyed as boulders were carelessly dumped over the road into the valley. At least 6 villages were affected also by the silting of river caused by the construction.[12]

In Taiping, about 1,000 durian trees have been felled to make way for the new north-south expressway cutting across Bukit Berapit. With an average of 300 fruits produced by a tree each year, this would mean a permanent loss of 300,000 durians. At $2 a fruit, it means a total financial loss of about $600,000. Kampung Pauh headman, Encik Haji Sudin bin Ahmad, 57,

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* Head of Worldwatch Institute, Washington, USA

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said the durian and other fruit trees along a five-kilometre stretch were chopped down in March 1983. 'It really hurts to see so many durian trees - the livelihood of villagers - destroyed. Ten durian trees could safely take care of all expenses of a five-member family for the whole year.'[13]

Encik Haji Sudin Ahmad's statement is a stark reminder of what E.F. Schumacher said in his book 'Small Is Beautiful':[14]

> 'Civilised man has despoiled most of the lands on which he has lived for long. This is the main reason why his progressive civilisations have moved from place to place. It has been the chief cause for the decline of his civilisations in older settled regions. It has been the dominant factor in determining all trends of history.'

However, not only are land taken away; homes are also torn down for huge roads. The foreshore area in Penang is one of the many examples. There, 50,000 people are threatened to have their homes pulled down to make way for a highway. With their houses destroyed, they will have nowhere to go and no jobs left, having depended on the foreshore for their livelihood.[15]

3. Gross National Polluter

(i) Air pollution

With the priority given to road transport, the air has also become insurmountably polluted. In fact, car pollution is one of the biggest contributor to air pollution in the country.

Reports released in 1977 showed that 635,000 tons of pollutants are released yearly over Peninsular Malaysia. It was estimated that nearly 45 per cent (225,750 tons) alone come from transportation. The Ministry of Science, Technology and Environment also warned that the pollution is increasing yearly at a rate of 10 per cent and that densely populated areas are under serious threat.

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On the average, a car produces 276 grams of carbon monoxide, 13.5 grams of nitrogen oxides and 24.3 grams of hydrocarbons from one litre of petrol. 70 per cent of the lead in the petrol is also expelled out with the exhaust.[16]

* Carbon monoxide - this gas is toxic causing visual disturbances and blood diseases.

* Nitrogen oxides - condenses as nitrous and nitric acid in the lungs. This eats away at the lung lining causing bronchitis and emphysema, both chronic lung diseases.

* Hydrocarbons - which eventually forms smog. Smog makes the eyes sting, affects lungs, throat and is a possible cause of lung cancer.

* Besides, exhaust has aldehydes, organic acid, benzopyrene, ammonic and solid particles.

In 1980, the Ministry of Science, Technology and Environment said that carbon monoxide measurements showed levels at 50 ppm (parts per million) in Kuala Lumpur - 16 times above the WHO safe level (i.e. 3 ppm). Carbon monoxide levels in five urban areas were also found to be dangerously high.

The cost of cleaning up pollution is one aspect of the problem, the diseases it cause is yet another. Thus, road transportation, far from reducing the problems appears to create more.

(ii) Noise pollution

There is noise pollution with high vehicular traffic. Noise brings mental disorientation, stress, cardio-vascular disease, fatigue and partial to complete deafness. Noise has also been found to hasten the onset of menstruation, affects growing foetus, leading to premature birth.[17]

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CAP's study showed that noise along busy roads is two or three times above safety standard. In Green Lane, Penang for example, the noise found was 65 dBA. In Kelawei Road, Penang, the levels were between 65 dBA to 70 dBA. The safety level considered was 55 dBA.[18]

According to the Kuala Lumpur Master Plan, 66 per cent of the residents complained of noise pollution citing motor vehicles as the source.[19]

4. Depletion Of Resources And Energy

Cars are also monstrous consumers of steel, iron, copper, rubber, zinc, aluminium and glass. It was also estimated that the motor vehicle industry in the US consumed some 20 per cent of annual steel production, 79 per cent copper, 12 per cent nickel, 35 per cent of zinc and 58 per cent of lead.[20]

Much of these raw materials are in critical situation to the world resources.[21]

They consume large quantities of petroleum. It takes up about 90 per cent of all liquid fuel taken by transport.

5. Cost Of Space For Parking

Besides this, precious space has to be sacrificed for cars. In 1981 for example, the Penang State Government ordered the evacuation of 30 families comprising of 200 people in Hutton Lane. Upon the homes of these poor, the Council built a 5-storey car park and lavishly spent $4 million to construct about 120 parking bays. Indeed, according to the Penang Municipal officer in charge of parking, Encik Ismail Hamid, the car park is losing about $250 a day from lack of use.[22]

In another interesting example was the building of a car park for 9 cars in front of the Ministry of Agriculture. $36,000 was spent for this purpose. The Treasury approved $50,000 for car parks here.[23]

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Recently, City Hall proposed to build another car park in Jalan Tun Ismail, Kuala Lumpur worth $30 million.[24] If this was given to the people instead of cars, it could easily house perhaps 3,000 poorer people or more.

6. Others - Maintenance And Cost Of Roads

The cost of building roads is already high. Datuk Samy Vellu, the Works Minister said that 'maintenance cost of roads had increased to $13,000 per km a year.'[25] It may be of interest to note that according to the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) report, providing one kilometre of inland waterways costs only one fifth as much as building a railway of that length and one ninth the cost of road.[26]

7. Others - Car Safety

This section does not necessary relate to the title of this paper but it is nevertheless necessary to dispell the mistruth that accidents are caused by human negligence. Much less so, today the blame goes more to the lack of encouragement to alternative and safer forms of travel, the poor planning of roads, the lackadaisical enforcement of traffic laws and the defective production of cars. In the book 'Unsafe At Any Speed', Ralph Nader produced the revolutionary proved that cars were a major contributor to road accidents much to the awareness of the manufacturers.

The U.S. Department of Transportation has from time to time show the extreme damage that can be done to passengers and drivers due to the uncrashworthiness of cars. The present manufacture of car bodies fail to meet the strength required by the U.S. on impact. Some cars miserably fail by 80 to 200 per cent below the standard. The Toyota Cressida model for example when crashed at 35 mph caused an impact of 1,980 HIC* on the head of a driver when the maximum allowed is 1,000 HIC. Toyota Starlet when similarly crashed caused an impact of 1,836 HIC for the driver and 1,357 for the passenger. Mazda 626, when crashed on the other hand, resulted in 1,693 HIC for the passenger. In fact, 14 of the 35 models suffered metallic weakness necessary to protect the car occupants.[27]

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* Head injury criterion

Besides these, in:

* Mini: 10 per cent of the cars failed. Front suspension very prone to trouble. Headlights, hand-brake and stop lights troublesome.[28]

* Ford Escort 1100: 16 per cent failed at the brakes, brake lines, wheel bearings, shock absorbers and transmission.[29]

* Ford Cortina 1300: 6 per cent failed at the brake lines, windscreen wipers and shock absorbers very prone to trouble. Exhaust troublesome.[30]

* Toyota 2000 GT: a design fault that might cause steering to become disabled.[31]

* Volkswagen: was assembled such that the suspension was set up wrongly.[32]

* BMW 1600/2002: needed modification to ensure that carburettor throttle was closed when driver took foot off accelerator.[33]

* British Leyland Motors recalled their Austin Allegro 1973 to 1976 models in England because of a defective tie rod in the front suspension of the car. This model was not withdrawn for correction in other countries including Malaysia.[34]

* Around the same period, the U.S. National Highway Safety Administration in Washington recalled 134,000 models of Toyota Corona because of a serious defect. However, the same was not done in Malaysia.[35]

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The Japanese Ministry of Transport before it demanded disclosure of safety faults, found that Toyota and Nissan manufacturers had hushed up defects on nearly two and a half million cars, including doors that flew open easily, defective brakes and engines that could catch fire. As the car makers put it: 'We were merely following the trade custom of not making unpleasant details public.' The result of this thoughtful concern for car buyers' feelings was that over half the defective cars were still on the road by the time of the Japanese Ministry of Transport's discovery.[36]

IV CONCLUSION

In conclusion, the Government's transportation provisions have negative effects on the country. Their over dependence on one form of travel and perhaps the most expensive form has appeared to create greater problems than solved any.

In addition to loss of life and limbs, land and spaces have been made scarce. Most of the funds for such development especially highways have been loans procurred from international financial institutions. Interest has to be paid for these loans and in the country facing recession, there is certainly need to exercise prudence over the overall implications of these loans and expenditure.

Thus, the Government should reconsider its present trend of development in transportation. A National Transport Policy should be introduced so that a sustainable and integrated transport system is achieved. It should also steer clear from modes that have negative or disastrous consequence and should try instead to opt for a system that will enhance the quality of life of Malaysians.

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